

## SEARCH REQUEST FORM

Requestor's

Name:

Devi, S.

Serial

Number:

09/207188

Date:

Phone:

Art Unit:

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## Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s).

Blake, M.  
Zabriskie, J  
Tai, J., et al.

Point of Contact:  
Beverly Shears  
Technical Info. Specialist  
CM1 12C14 Tel: 308-4994

## STAFF USE ONLY

Date completed:

06-16-00

Searcher:

Beverly C4994

Terminal time:

Elapsed time:

CPU time:

Total time:

Number of Searches:

Number of Databases:

## Search Site

STIC

CM-1

Pre-S

## Type of Search

N.A. Sequence

A.A. Sequence

Structure

Bibliographic

## Vendors

IG

STN

Dialog

APS

Geninfo

SDC

DARC/Questel

Other

Devi, S.  
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13jun00 14:27:16 User219783 Session D1595.2

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File 35:DISSERTATION ABSTRACTS ONLINE 1861-1999/DEC

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File 77:Conference Papers Index 1973-2000/May

(c) 2000 Cambridge Sci Abs

File 144:Pascal 1973-2000/Jun W2

(c) 2000 INIST/CNRS

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File 266:FEDRIP 2000/May

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(c) 2000 Inst for Sci Info

File 348:European Patents 1978-2000/Jun W01

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Set Items Description

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? ds; t 7/3,ab/1-5

Set	Items	Description
S1	69	2 (W) (A OR ALPHA) (W) (L(W) RHAP OR LRHAP)
S2	75	3 (W) (A OR ALPHA) (W) (L(W) RHAP OR LRHAP)
S3	20	S1(5N)S2
S4	6	S3 AND (STREPTOCOC? OR INFECT?)
S5	1	S3 AND GAS
S6	6	S4 OR S5
S7	5	RD (unique items)

>>>No matching display code(s) found in file(s): 65, 113

7/3,AB/1 (Item 1 from file: 35)

DIALOG(R)File 35:DISSERTATION ABSTRACTS ONLINE

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01256406 AADNN69503

THE SYNTHESIS, IMMUNOLOGICAL CHARACTERIZATION AND NMR ANALYSIS OF CELL-WALL OLIGOSACCHARIDES OF BACTERIAL ORIGIN (STREPTOCOCCI)

Author: REIMER, KERRY BRUCE

Degree: PH.D.

Year: 1991

Searcher : Shears 308-4994

key terms  
Poly Saccharide  
Form. I

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-key terms  
Compd. claims 61

FILE 'CAPLUS' ENTERED AT 14:18:54 ON 13 JUN 2000

L1 87 S 2 (W) (A OR ALPHA) (W) (L(W) RHAP OR LRHAP)  
L2 97 S 3 (W) (A OR ALPHA) (W) (L(W) RHAP OR LRHAP)  
L3 27 S L1(5A) L2  
L4 14 S L3(5A) ((BETA OR B) (W) D(W) GLC?)  
L5 2 S L4 AND (STREPTOCOCC? OR INFECT? OR GAS)

L5 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 2000:94068 CAPLUS

DOCUMENT NUMBER: 132:263862

TITLE: Bivalency and epitope specificity of a  
high-affinity IgG3 monoclonal antibody to the  
**Streptococcus** Group A carbohydrate

AUTHOR(S): Pitner, J. B.; Beyer, W. F.; Venetta, T. M.;  
Nycz, C.; Mitchell, M. J.; Harris, S. L.;  
Marino-Albernas, J. R.; Auzanneau, F.-I.;  
Forooghian, F.; Mario Pinto, B.

CORPORATE SOURCE: Becton Dickinson Research Center, Research  
Triangle Park, NC, USA

SOURCE: Carbohydr. Res. (2000), 324(1), 17-29  
CODEN: CRBRAT; ISSN: 0008-6215

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The binding of Strep 9, a mouse monoclonal antibody (mAb) of the  
IgG3 subclass directed against the cell-wall polysaccharide of Group  
A **Streptococcus** (GAS), has been characterized.

The intact antibody and proteolytic fragments of Strep 9 bind  
differently to GAS: the intact mAb and F(ab)'2 have  
greater affinity for the carbohydrate epitope than the monomeric Fab  
or F(ab)'. A mode of binding in which Strep 9 binds bivalently to  
portions of the polysaccharide on adjacent chains on GAS  
is proposed. A competitive ELISA protocol using a panel of  
carbohydrate inhibitors shows that the branched trisaccharide,

**beta.-D-GlcpNAc**-(1.fwdarw.3

)-[.alpha.-L-Rhap-(1.fwdarw.2

)]-.alpha.-L-Rhap, and an extended

surface are key components of the epitope recognized by Strep 9.

Microcalorimetry measurements with the mAb and two synthetic  
haptens, a tetrasaccharide and a hexasaccharide, show  
enthalpy-entropy compensation as seen in other oligosaccharide-  
protein interactions. Mol. modeling of the antibody variable region  
by homol. modeling techniques indicates a groove-shaped combining  
site that can readily accommodate extended surfaces. Visual docking  
of an oligosaccharide corresponding to the cell-wall polysaccharide  
into the site provides a putative model for the complex, in which a  
heptasaccharide unit occupies the site and the GlcpNAc residues of  
two adjacent branched trisaccharide units occupy binding pockets

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within the groove-shaped binding site.

- IT Immunoglobulins  
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(G3, monoclonal; bivalency and epitope specificity for cell wall polysaccharide of Group A **Streptococcus**)
- IT **Streptococcus** group A  
(bivalency and epitope specificity for IgG3 to cell wall polysaccharide of)
- IT Polysaccharides, biological studies  
RL: BPR (Biological process); PRP (Properties); BIOL (Biological study); PROC (Process)  
(capsular; bivalency and epitope specificity for IgG3 to cell wall polysaccharide of group A **Streptococcus**)
- IT Epitopes  
(for monoclonal antibody to cell wall polysaccharide of Group A **Streptococcus**)
- IT Immunoglobulins  
RL: PRP (Properties)  
(fragments, Fv; mol. modeling of Fv fragment to cell wall polysaccharide of group A **Streptococcus**)
- IT Molecular modeling  
(of Fv fragment to cell wall polysaccharide of group A **Streptococcus**)
- IT 189040-63-9  
RL: BOC (Biological occurrence); BPR (Biological process); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); PROC (Process)  
(of epitope for IgG3 antibody to cell wall polysaccharide of group A **Streptococcus**)

REFERENCE COUNT: 36

- REFERENCE(S): (2) Auzanneau, F; Carbohydr Res 1996, V291, P21  
CAPLUS  
(4) Bernstein, F; J Mol Biol 1977, V112, P535  
CAPLUS  
(6) Blundell, T; Eur J Biochem 1988, V172, P513  
CAPLUS  
(7) Braun, D; Microbiol Immunol 1983, V27, P823  
CAPLUS  
(10) Coligan, J; Immunochemistry 1978, V15, P755  
CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1994:436021 CAPLUS

DOCUMENT NUMBER: 121:36021

TITLE: Convergent synthesis of an elusive  
hexasaccharide corresponding to the cell-wall  
polysaccharide of the .beta.-hemolytic

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**Streptococcus Group A**

AUTHOR(S): Marino-Albernas, Jose R.; Harris, Shannon L.;  
Varma, Vikram; Pinto, B. Mario  
CORPORATE SOURCE: Dep. Chem., Simon Fraser Univ., Burnaby, BC, V5A  
1S6, Can.  
SOURCE: Carbohydr. Res. (1993), 245(2), 245-57  
CODEN: CRBRAT; ISSN: 0008-6215  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A convergent synthesis of a hexasaccharide corresponding to the  
cell-wall polysaccharide of the .beta.-hemolytic  
**Streptococcus** Group A is described. The strategy relies on  
the prepn. of a key linear trisaccharide unit .beta.-  
**D-GlcpNAc**-(1.fwdarw.3)-.alpha  
.-**L-Rhap**-(1.fwdarw.2)-.alpha  
.-**L-Rhap** which has previously resisted out  
efforts. The trisaccharide functions both as a glycosyl acceptor  
and donor to give an elusive hexasaccharide. This fully  
functionalized unit can serve, in turn, as a glycosyl acceptor or  
donor for the synthesis of higher-order structures. Deprotection  
gives a hitherto unknown hexasaccharide for use as a hapten in  
immunochem. studies. The characterization of all compds. by  
high-resoln. 1H and 113 C NMR spectroscopy is also described.

IT Polysaccharides, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)  
(of .beta.-hemolytic **Streptococcus** group A,  
hexasaccharide corresponding to, prepn. of)

IT **Streptococcus**

(group A, hexasaccharide corresponding to cell-wall  
polysaccharide of, prepn. of)

IT 155866-43-6P 155866-44-7P 155868-80-7P 155891-10-4P  
155891-11-5P 155891-12-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(intermediate in prepn. of hexasaccharide)

IT 155866-45-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and deblocking of)

IT 155866-46-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(prepn. and mol. structure of)

IT 109714-38-7 142545-56-0 155866-42-5

RL: RCT (Reactant)  
(reaction of, in synthesis of hexasaccharide)

(FILE 'MEDLINE, BIOSIS, EMBASE, JAPIO, JICST-EPLUS, TOXLIT,  
TOXLINE, PHIC, PHIN' ENTERED AT 14:24:10 ON 13 JUN 2000)

L6 7 S L5

L7 4 DUP REM L6 (3 DUPLICATES REMOVED)

Searcher : Shears 308-4994

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L7 ANSWER 1 OF 4 MEDLINE DUPLICATE 1  
ACCESSION NUMBER: 2000188587 MEDLINE  
DOCUMENT NUMBER: 20188587  
TITLE: Bivalency and epitope specificity of a high-affinity  
IgG3 monoclonal antibody to the **Streptococcus**  
group A carbohydrate antigen. Molecular modeling of a  
Fv fragment.  
AUTHOR: Pitner J B; Beyer W F; Venetta T M; Nycz C; Mitchell  
M J; Harris S L; Marino-Albernas J R; Auzanneau F I;  
Foroghian F; Pinto B M  
CORPORATE SOURCE: Becton Dickinson Research Center, Research Triangle  
Park, NC 27709, USA.  
SOURCE: CARBOHYDRATE RESEARCH, (2000 Jan 29) 324 (1) 17-29.  
Journal code: CNY. ISSN: 0008-6215.  
PUB. COUNTRY: Netherlands  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200006  
ENTRY WEEK: 20000603

AB The binding of Strep 9, a mouse monoclonal antibody (mAb) of the  
IgG3 subclass directed against the cell-wall polysaccharide of Group  
A **Streptococcus** (GAS), has been characterized.  
The intact antibody and proteolytic fragments of Strep 9 bind  
differently to GAS: the intact mAb and F(ab)2' have  
greater affinity for the carbohydrate epitope than the monomeric Fab  
or F(ab)'. A mode of binding in which Strep 9 binds bivalently to  
portions of the polysaccharide on adjacent chains on GAS  
is proposed. A competitive ELISA protocol using a panel of  
carbohydrate inhibitors shows that the branched trisaccharide,  
**beta-D-GlcpNAc-(1-->3)-[**  
**alpha-L-Rhap-(1-->2)]-**  
**alpha-L-Rhap**, and an extended surface  
are key components of the epitope recognized by Strep 9.  
Microcalorimetry measurements with the mAb and two synthetic  
haptens, a tetrasaccharide and a hexasaccharide, show  
enthalpy-entropy compensation as seen in other oligosaccharide-  
protein interactions. Molecular modeling of the antibody variable  
region by homology modeling techniques indicates a groove-shaped  
combining site that can readily accommodate extended surfaces.  
Visual docking of an oligosaccharide corresponding to the cell-wall  
polysaccharide into the site provides a putative model for the  
complex, in which a heptasaccharide unit occupies the site and the  
GlcNAc residues of two adjacent branched trisaccharide units occupy  
binding pockets within the groove-shaped binding site.

L7 ANSWER 2 OF 4 BIOSIS COPYRIGHT 2000 BIOSIS  
ACCESSION NUMBER: 1997:402139 BIOSIS  
Searcher : Shears 308-4994

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DOCUMENT NUMBER: PREV199799708342  
TITLE: Structural studies of the O-antigen polysaccharide from Escherichia coli 0138.  
AUTHOR(S): Linnerborg, Malin; Weintraub, Andrej; Widmalm, Goran (1)  
CORPORATE SOURCE: (1) Dep. Organic Chem., Arrhenius Lab., Stockholm Univ., S-106 91 Stockholm Sweden  
SOURCE: European Journal of Biochemistry, (1997) Vol. 247, No. 2, pp. 567-571.  
ISSN: 0014-2956.

DOCUMENT TYPE: Article  
LANGUAGE: English

AB The structure of the O-antigen polysaccharide from Escherichia coli 0138 has been determined. NMR spectroscopy, together with component and methylation analyses, of native and reduced polysaccharide were the principal methods used. The sequence of the sugar residues could be determined by NOESY and heteronuclear multiple bond connectivity (HMBC) NMR experiments. It is concluded that the polysaccharide is composed of tetrasaccharide repeating units with the following structure: fwdarw 4)-alpha-D-GalpNAcA-(1 fwdarw 3)-beta-D-GlcpNAc-(1 fwdarw 2)-alpha-L-Rhap-(1 fwdarw 3)-alpha-L-Rhap-(1 fwdarw .

L7 ANSWER 3 OF 4 MEDLINE DUPLICATE 2  
ACCESSION NUMBER: 93379951 MEDLINE  
DOCUMENT NUMBER: 93379951  
TITLE: Convergent synthesis of an elusive hexasaccharide corresponding to the cell-wall polysaccharide of the beta-hemolytic **Streptococcus** group A.  
AUTHOR: Marino-Albernas J R; Harris S L; Varma V; Pinto B M  
CORPORATE SOURCE: Department of Chemistry, Simon Fraser University, Burnaby, British Columbia, Canada..  
SOURCE: CARBOHYDRATE RESEARCH, (1993 Jul 19) 245 (2) 245-57.  
Journal code: CNY. ISSN: 0008-6215.  
PUB. COUNTRY: Netherlands  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199312

AB A convergent synthesis of a hexasaccharide corresponding to the cell-wall polysaccharide of the beta-hemolytic **Streptococcus** Group A is described. The strategy relies on the preparation of a key linear trisaccharide unit beta-D-GlcpNAc-(1-->3)-alpha-L-Rhap-(1-->2)-alpha-L-Rhap which has previously resisted our efforts. The trisaccharide functions both as a glycosyl acceptor and donor to give an elusive hexasaccharide. This fully functionalized unit can

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serve, in turn, as a glycosyl acceptor or donor for the synthesis of higher-order structures. Deprotection gives a hitherto unknown hexasaccharide for use as a hapten in immunochemical studies. The characterization of all compounds by high-resolution <sup>1</sup>H and <sup>13</sup>C NMR spectroscopy is also described.

L7 ANSWER 4 OF 4 BIOSIS COPYRIGHT 2000 BIOSIS  
ACCESSION NUMBER: 1993:252123 BIOSIS  
DOCUMENT NUMBER: PREV199395131298  
TITLE: Antibody-oligosaccharide interactions: The synthesis of 2-deoxy-alpha-L-rhamnose containing oligosaccharide haptens related to Shigella flexneri variant Y antigen.  
AUTHOR(S): Hanna, H. Rizk; Bundle, David R. (1)  
CORPORATE SOURCE: (1) Institute Biol. Sci., National Research Council Canada, Ottawa, ON K1A 0R6 Canada  
SOURCE: Canadian Journal of Chemistry, (1993) Vol. 71, No. 1, pp. 125-134.  
ISSN: 0008-4042.  
DOCUMENT TYPE: Article  
LANGUAGE: English  
SUMMARY LANGUAGE: English; French

AB A series of di- and trisaccharide glycosides based on the alpha-L-Rha(1 fwardw 3)beta-D-GlcNAc and alpha-L-Rha(1 fwardw 3)alpha-L-Rha(1 fwardw 3)beta-D-GlcNAc elements have been synthesized to locate the minimal oligosaccharide determinant of the Shigella flexneri O-polysaccharide, which is built from a tetrasaccharide repeating unit, ( fwardw 2) alpha-L-Rhap(1 fwardw 2)alpha-L-Rhap(1 fwardw 3)alpha-L-Rhap(1 fwardw 3)beta-D-GlcNAcp(1-)-n. These compounds also serve to identify the carbohydrate surface of the Shigella antigen that interacts with a monoclonal antibody, currently the subject of crystallographic studies. Two strategies utilizing suitably protected glycals 1 and 19 were employed to obtain analogs bearing either terminal or glycosylated 2,6-dideoxy-alpha-L-arabino-hexopyranosyl (2-deoxy-alpha-L-rhamnopyranosyl) residues. N-Iodosuccinimide activation of the glycals in the presence of selectively protected mono- and disaccharide alcohols afforded 2-deoxy-2-iodo-alpha-L-rhamnopyranosides and these were ultimately reduced during deprotection stages to afford the desired functionality. Di-O-acetyl L-rhamnal 1 reacted with monosaccharides 2 and 7, and with disaccharide 11, to yield disaccharides 4 and 8, and trisaccharide 12, each bearing a terminal 2-deoxy-alpha-L-rhamnopyranosyl residue. The selectively protected 3-O-benzoyl-4-O-benzyl-L-rhamnal 19 was synthesized from L-rhamnal and used to prepared trisaccharide 22, which contained an internal 2-deoxy-2-iodo-alpha-L-rhamnopyranosyl unit. Removal of protecting groups gave the oligosaccharides 6, 10, 14, and 23. Oligosaccharides

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that contained a 2-deoxy-alpha-L-rhamnopyranosyl residue showed enhanced inhibitory power: in the case of trisaccharide 23 a 1.8 kcal mol<sup>-1</sup> relative increase in free energy of binding compared to a larger pentasaccharide epitope, alpha-L-Rhap(1 fwardw 2)

alpha-L-Rhap(1 fwardw 3)

alpha-L-Rhap(1 fwardw 3)beta-

D-GlcNAcp(1 fwardw 2)alpha-L-Rhap-1 fwardw OMe.

These data suggest that the rhamnose O-2 hydroxyl of residue C points toward and has important interactions with binding site amino acids.

FILE 'CAPLUS' ENTERED AT 14:30:08 ON 13 JUN 2000

L8 2826 SEA ABB=ON PLU=ON GAS(S)STREPTOC? OR STREPTOC?(S)((TYPE OR GROUP OR CLASS)(1A)A)

L9 339 SEA ABB=ON PLU=ON L8 AND (POLYSACCHARID? OR POLY SACCHARID?)

L10 115 SEA ABB=ON PLU=ON L9 AND (PROTEIN OR TOXOID? OR TOXIN OR CRM197 OR CRM(W)197)

L11 9 SEA ABB=ON PLU=ON L10 AND COVALEN?

L12 18 SEA ABB=ON PLU=ON L10 AND LINK?

L13 25 SEA ABB=ON PLU=ON (L11 OR L12) NOT L5

L13 ANSWER 1 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 2000:309052 CAPLUS

TITLE: Expression cloning and characterization of hyaluronan synthase

AUTHOR(S): Jongsareejit, Boonsri

CORPORATE SOURCE: Department of Biology, Faculty of Science, Silpakorn University, Nakorn Pathom, 73000, Thailand

SOURCE: Biotechnol. Sustainable Util. Biol. Resour. Trop. (2000), 14, 200-204

CODEN: BSUTFT

PUBLISHER: Osaka University, International Center for Biotechnology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Hyaluronic acid (HA) is a naturally occurring polysaccharide composed of a .beta.1,4-linked repeating disaccharide of glucuronic acid and 1,3-linked to N-acetylglucosamine. HA is a major constituent of the vitreous humor of the eye, synovial fluid, extracellular matrixes, and skin. The polysaccharide also interacts with various receptors and binding proteins that modulate cellular behavior such as migration, adhesion, and wound healing. Interestingly, HA is also found in the extracellular capsule of pathogenic group A and group C Streptococci. The enzyme that polymerizes the polysaccharide is HA synthase. HA is non-immunogenic and therefore has great potential in medicine. At present, HA is one of

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a polysaccharide used for clin. purposes, such as eyes surgery, in the treatment of osteoarthritis, rheumatoid arthritis and liver cirrhosis as well as in promoting wound repair. The mol. cloning of genes encoding enzymes responsible for hyaluronan biosynthesis is one of the essential steps in elucidating details of HA biosynthetic pathway. The cloning will also help in paving ways to improve enzyme function and resulting in non-pathogenic mutants for larger prodn. of the desired hyaluronic acid which will ensure the absence of other toxic impurities. Objectives of the project are as the followings: (1) Mol. cloning of the hyaluronan synthase gene from bacteria. (2) Expression of the gene, purifn. of the recombinant enzyme, then followed with biochem. characterization. (3) Anal. of the structure-function relationships of the hyaluronan synthase with protein engineering technol. (4) Development of a method to improve enzyme functions.

REFERENCE COUNT: 3  
REFERENCE(S): (1) Caparon, M; Methods Enzymol 1991, V204, P556  
CAPLUS  
(2) DeAngelis, P; Biochemistry 1994, V33, P9033  
CAPLUS  
(3) Sanger, F; Proc Ncad Sci 1977, V74, P5463  
CAPLUS

L13 ANSWER 2 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 2000:275313 CAPLUS  
DOCUMENT NUMBER: 132:313670  
TITLE: Coated substrates for blood, plasma, or tissue  
washing and columns equipped with these  
substrates  
INVENTOR(S): Dunzendorfer, Udo; Will, Gottfried  
PATENT ASSIGNEE(S): Germany  
SOURCE: Ger. Offen., 30 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German.  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19845286	A1	20000427	DE 1998-19845286	19981001
EP 1004598	A2	20000531	EP 1999-118541	19990918
EP 1004598	A3	20000607		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.: DE 1998-19845286 19981001

AB Columns, filters, cannulas, etc. contg. substrates coated with specific antibodies can be used during plasmapheresis to remove pathogenic cytokines such as tumor necrosis factor (TNF), anti-TNF,

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fragments of TNF or anti-TNF, or TNF transport **proteins** from blood, plasma, or tissues. The substrates may addnl. be coated with antibodies to microbial or viral pathogens or mixts. of pathogens as well as to **polysaccharide** antigens, viral capsids, microbial antigens, reverse transcriptase, endothelin, **protein A**, etc. Selective removal of these pathogens, antigens, **proteins**, etc. leaves all normal plasma components unchanged and obviates the need for supplementation of the plasma with these components. Suitable substrates include polymers, polymer-coated metals, cellulose derivs., starch, and Sepharose; these may be derivatized for **covalent** binding of the pathogens or pathogenic mols. Thus, Escherichia coli pyelonephritis was successfully treated by plasmapheresis coupled with columns loaded with anti-TNF-.alpha. for 14 days, 4 h/day, as detd. by decreases in plasma TNF-.alpha. levels and colony counts in urine cultures.

L13 ANSWER 3 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 2000:144761 CAPLUS

DOCUMENT NUMBER: 132:193251

TITLE: Immunogenic .beta.-propionamido-linked  
**polysaccharide protein**

conjugate useful as a vaccine produced using an  
N-acryloylated **polysaccharide**

INVENTOR(S): Michon, Francis; Huang, Chun-Hsien; Uitz,  
Catherine

PATENT ASSIGNEE(S): North American Vaccine, Inc., USA

SOURCE: PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000010599	A2	20000302	WO 1999-US18982	19990818
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.: US 1998-PV97120 19980819

AB Novel immunogenic .beta.-propionamido-linked  
**polysaccharide-** and N-propionamido-linked

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oligosaccharide-protein conjugates are provided as well as method of producing the conjugates. The conjugation procedure is simple, rapid, reproducible and applicable to a variety of **polysaccharides** or oligosaccharides derived from bacterial species, yeast, cancer cells or chem. synthesized. Vaccines and methods of immunization against infection or cancer using the immunogenic .beta.-propionamido-linked **polysaccharide-** and .beta.-propionamido-linked oligosaccharide-protein conjugates are also disclosed.

L13 ANSWER 4 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1998:816006 CAPLUS

DOCUMENT NUMBER: 130:65227

TITLE: Producing immunogenic constructs using soluble carbohydrates activated via organic cyanylating reagents

INVENTOR(S): Lees, Andrew

PATENT ASSIGNEE(S): Henry M. Jackson Foundation for the Advancement of Military Medicine, USA

SOURCE: U.S., 31 pp., Cont.-in-part of U.S. 5,651,971.  
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 5849301	A	19981215	US 1995-482666	19950607
US 5651971	A	19970729	US 1995-408717	19950322
PRIORITY APPLN. INFO.:			US 1993-124491	19930922
			US 1995-408717	19950322

AB The invention relates to a process for producing an immunogenic construct comprising activating at least one first carbohydrate-contg. moiety with CDAP, CTEA or pNPC, and **covalently** joining the activated first moiety to a second moiety. Preferably, the first moiety is a **polysaccharide** and the second moiety is a **protein**. Immunogenic constructs are prepd. by this process using either direct or indirect conjugation of the first and second moieties.

REFERENCE COUNT: 15

REFERENCE(S): (2) Anon; DE 1815332 1969 CAPLUS  
(3) Anon; EP 186576 1986 CAPLUS  
(4) Anon; EP 0428486 A1 1991 CAPLUS  
(6) Anon; WO 95/08348 1995 CAPLUS  
(7) Brunswick; The Journal of Immunology 1988, V140(10), P3364 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

Searcher : Shears 308-4994

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L13 ANSWER 5 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1997:539243 CAPLUS

DOCUMENT NUMBER: 127:175396

TITLE: Producing immunogenic constructs using soluble carbohydrates activated via organic cyanylation reagents

INVENTOR(S): Lees, Andrew

PATENT ASSIGNEE(S): Henry M. Jackson Foundation for the Advancement of Military Medicine, USA

SOURCE: U.S., 29 pp. Cont.-in-part of U.S. Ser. No. 124,491, abandoned.  
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5651971	A	19970729	US 1995-408717	19950322
CA 2171942	AA	19950330	CA 1994-2171942	19940921
US 5693326	A	19971202	US 1995-456694	19950601
US 5849301	A	19981215	US 1995-482666	19950607
CA 2215933	AA	19960926	CA 1996-2215933	19960322
WO 9629094	A1	19960926	WO 1996-US4013	19960322
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML				
AU 9652591	A1	19961008	AU 1996-52591	19960322
AU 712981	B2	19991118		
EP 814833	A1	19980107	EP 1996-908900	19960322
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
JP 11502820	T2	19990309	JP 1996-528653	19960322
PRIORITY APPLN. INFO.:				
			US 1993-124491	19930922
			US 1995-408717	19950322
			US 1995-482661	19950607
			WO 1996-US4013	19960322

AB The invention relates to a process for producing an immunogenic construct comprising activating at least one first carbohydrate-contg. moiety with CDAP, and covalently joining the activated first moiety to a second moiety. Preferably, the first moiety is a polysaccharide and the second moiety is a protein. Immunogenic constructs are prepd. by this pertussis toxoid-hemophilus influenza

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**polysaccharide** conjugates were prepd with spacer CDAP and used as vaccine.

L13 ANSWER 6 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1997:295968 CAPLUS

DOCUMENT NUMBER: 126:288707

TITLE: A functional analysis of the *Streptococcus pneumoniae* genes involved in the synthesis of type 1 and type 3 capsular

**polysaccharides**

AUTHOR(S): Garcia, Ernesto; Arrecubieta, Carlos; Munoz, Rosario; Mollerach, Marta; Lopez, Rubens

CORPORATE SOURCE: Centro de Investigaciones Biologicas (CSIC), Madrid, Spain

SOURCE: Microb. Drug Resist. (Larchmont, N. Y.) (1997), 3(1), 73-88

CODEN: MDREFJ; ISSN: 1076-6294

PUBLISHER: Liebert

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Type 3 pneumococci produce a capsule composed of cellobiuronic acid units connected in a .beta.(1.fwdarw.3) **link**-age. Cellobiuronic acid is a disaccharide consisting of D-glucuronic acid (GlcA) .beta.(1.fwdarw.4) **linked** to D-glucose (Glc). The genes implicated in the biosynthesis of the type 3 capsule have been cloned, expressed, and biochem. characterized. The three type 3-specific genes-designated as cap3ABC-are transcribed together. However, the two complete open reading frames located upstream of cap3A are not transcribed and, consequently, are not required for capsule formation. The promoter of the cap3 operon was localized by primer extension anal. The products of cap3A, cap3B, and cap3C were biochem. characterized as a UDP-Glc dehydrogenase, the type 3 **polysaccharide** synthase, and a Glc-1-P uridyltransferase, resp. The Cap3B synthase was expressed in *Escherichia coli*, and pneumococcal type 3 **polysaccharide** was synthesized in this heterologous system. When a recombinant plasmid (pLSE3B) contg. cap3B was introduced by transformation into encapsulated pneumococci of types 1, 2, 5, or 8, the lincomycin-resistant transformants displayed a binary type of capsule, this is, they showed a type 3 capsule in addn. to that of the recipient type. Unencapsulated (S2) lab. strains of *S. pneumoniae* also synthesized a type 3 capsule when transformed with pLSE3B. We have cloned and sequenced seven type 1-specific genes (designated as cap1A-G), and their functions have been preliminarily assigned based on sequence similarities.

L13 ANSWER 7 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1997:49740 CAPLUS

DOCUMENT NUMBER: 126:171807

TITLE: Preparation of antigens and immunoabsorbents

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corresponding to the **Streptococcus**  
**Group A** cell-wall  
**polysaccharide**

AUTHOR(S): Auzanneau, France-Isabelle; Pinto, B. Mario  
CORPORATE SOURCE: Dep. of Chemistry, Simon Fraser Univ., Burnaby,  
BC, V5A 1S6, Can.  
SOURCE: Bioorg. Med. Chem. (1996), 4(11), 2003-2010  
CODEN: BMECEP; ISSN: 0968-0896  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The allyl glycosides of a tri-, penta- and hexasaccharide  
corresponding to the **Streptococcus Group**  
**A** cell-wall **polysaccharide** were coupled to solid  
or sol. supports to give immunoaffinity columns and  
neoglycoproteins, resp. Cysteamine hydrochloride was added to the  
allyl glycosides and the resulting cysteamine adducts were used for  
subsequent coupling to **linkers** via the amine  
functionality. The tri- and penta- saccharide cysteamine adducts  
were coupled directly to the azalactone-derivatized 3M Emphase  
Biosupport Medium AB 1 to yield two affinity columns. The penta-  
and hexa- saccharides were coupled to bovine serum albumin or  
ovalbumin via the conjugate addn. of the .epsilon.-amino groups of  
lysines on the **proteins** with the N-acryloylated sugars or  
the oligosaccharide-squarate adducts, derived in turn from the  
cysteamine adducts. The efficiency of the above methods is  
compared.

L13 ANSWER 8 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1996:687423 CAPLUS  
DOCUMENT NUMBER: 125:326404  
TITLE: Producing immunogenic constructs using soluble  
carbohydrates activated via organic cyanylating  
reagents  
INVENTOR(S): Lees, Andrew  
PATENT ASSIGNEE(S): USA  
SOURCE: PCT Int. Appl., 91 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 4  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9629094	A1	19960926	WO 1996-US4013	19960322
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, Searcher : Shears 308-4994				

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RU, SD, SE, SG, SI  
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB,  
GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,  
GN, ML

US 5651971 A 19970729 US 1995-408717 19950322  
AU 9652591 A1 19961008 AU 1996-52591 19960322  
AU 712981 B2 19991118  
EP 814833 A1 19980107 EP 1996-908900 19960322

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI

JP 11502820 T2 19990309 JP 1996-528653 19960322

PRIORITY APPLN. INFO.:

US 1995-408717 19950322  
US 1995-482661 19950607  
US 1993-124491 19930922  
WO 1996-US4013 19960322

AB The invention relates to a process for producing an immunogenic construct comprising activating at least one first carbohydrate-contg. moiety with CDAP, and **covalently** joining the activated first moiety to a second moiety through a spacer reagent. Preferably, the first moiety is detran or **polysaccharide** derived from Pneumococcus, Hemophilus influenza, **group A Streptococcus**, **group B Streptococcus**, or Neisseria meningitidis; the second moiety is a **protein** selected from albumin, pertussis **toxoid**, tetanus **toxoid**, malaria-derived peptide, antibody, **toxoid**, or lipoprotein; and the spacer is ethylene diamine, 1,6-hexane diamine, adipic dihydrazide, cystamine, glycine, or lysine.

L13 ANSWER 9 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1996:560867 CAPLUS

DOCUMENT NUMBER: 125:269819

TITLE: Detection of an analyte by fluorescence using a thin film optical device

INVENTOR(S): Bogart, Gregory R.

PATENT ASSIGNEE(S): Biostar, Inc., USA

SOURCE: U.S., 71 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5552272	A	19960903	US 1993-76348	19930610

AB A device is disclosed for detecting the presence or amt. of an analyte of interest, comprising a reflective solid, optical support and a label capable of generating a fluorescent signal upon

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excitation with a suitable light source, wherein said support comprises an attachment layer comprising a chem. selected from the group consisting of dendrimers, star polymers, mol. self-assembling polymers, polymeric siloxanes, and film-forming latexes wherein the support provides an enhanced level of exciting photons to the immobilized fluorescent label compd., and wherein the support also increases the capture of fluorescent signal. Examples are given of such devices for the detection of, e.g., enzymes, bacteria, viruses, etc. in, e.g., body fluids.

L13 ANSWER 10 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1996:25269 CAPLUS

DOCUMENT NUMBER: 124:66569

TITLE: Group A

**streptococcal polysaccharide**

immunogenic compositions and methods

INVENTOR(S): Blake, Milan S.; Zabriskie, John B.; Tai, Joseph Y.; Michon, Francis

PATENT ASSIGNEE(S): Rockefeller University, USA; North American Vaccine, Inc.

SOURCE: PCT Int. Appl., 66 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 9528960	A1	19951102	WO 1995-US4973	19950420
W:	AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TT, UA			
RW:	KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
US 5866135	A	19990202	US 1994-231229	19940421
CA 2188284	AA	19951102	CA 1995-2188284	19950420
AU 9522967	A1	19951116	AU 1995-22967	19950420
AU 709797	B2	19990909		
EP 754055	A1	19970122	EP 1995-916479	19950420
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE			
CN 1149835	A	19970514	CN 1995-193413	19950420
BR 9507400	A	19971007	BR 1995-7400	19950420
JP 09512276	T2	19971209	JP 1995-527802	19950420
NO 9604413	A	19961217	NO 1996-4413	19961017
FI 9604189	A	19961218	FI 1996-4189	19961018
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PRIORITY APPLN. INFO.:

US 1994-231229 19940421

WO 1995-US4973 19950420

AB This invention provides a novel immunogenic compn. and vaccine, processes for producing them and methods for immunization against infectious and disease caused by **group A Streptococci**. The compns. include **group A streptococcal polysaccharide covalently linked to protein** or liposomes to form immunogenic conjugates. The method of immunization for this invention comprises administering to an individual an immunogenic amt. of **group A polysaccharide**. The **group A polysaccharide** may be administered as a vaccine either on its own, conjugated to **proteins** or conjugated to liposomes. Addnl., the **group A polysaccharides** may be assocd. with an adjuvant. This invention is particularly useful for providing both active and passive immunogenic protection for those populations most at risk of contracting **group A Streptococcal** infections and disease namely adults, pregnant women and in particular infants and children.

L13 ANSWER 11 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1995:543755 CAPLUS

DOCUMENT NUMBER: 123:7444

TITLE: Immunogenicity and protective activity in animals of a **type V group B streptococcal polysaccharide**

-tetanus toxoid conjugate vaccine

AUTHOR(S): Wessels, Michael R.; Paoletti, Lawrence C.; Pinel, Julieanne; Kasper, Dennis L.

CORPORATE SOURCE: Division of Infectious Diseases, Beth Israel Hospital, Boston, MA, USA

SOURCE: J. Infect. Dis. (1995), 171(4), 879-84  
CODEN: JIDIAQ; ISSN: 0022-1899

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The recent recognition of type V strains as a frequent cause of group B streptococcal (GBS) infection in both infants and adults prompted investigation of an effective vaccine against these organisms. Purified GBS type V **polysaccharide** was **covalently linked to tetanus toxoid** to form a type V **polysaccharide-tetanus toxoid** conjugate vaccine. The conjugate elicited type V **polysaccharide-specific IgG antibodies** in rabbits, while unconjugated type V **polysaccharide** did not. Conjugate-induced rabbit antibodies were opsonic in vitro and protected mice against challenge with type V GBS. Efficacy of the conjugate vaccine also was demonstrated in a maternal vaccination/neonatal challenge model in mice. A GBS type V **polysaccharide-tetanus toxoid** conjugate is an

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effective immunogen in animal models and may be a useful component for inclusion in a multivalent GBS vaccine for human use.

L13 ANSWER 12 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1994:239633 CAPLUS

DOCUMENT NUMBER: 120:239633

TITLE: Devices and methods for detection of an analyte based upon light interference

INVENTOR(S): Bogart, Gregory R.; Moddel, Garret R.; Maul, Diana M.; Etter, Jeffrey B.; Crosby, Mark; Miller, John B.; Blessing, James; Kelley, Howard; Sandstrom, Torbjorn; Stibler, Lars

PATENT ASSIGNEE(S): Biostar, Inc., USA

SOURCE: PCT Int. Appl., 208 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 14

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9403774	A1	19940217	WO 1993-US5673	19930610
W: AT, AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9179004	A1	19921021	AU 1991-79004	19910320
AU 653940	B2	19941020		
EP 539383	A1	19930505	EP 1991-910056	19910320
EP 539383	B1	19960918		
R: BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
JP 05506936	T2	19931007	JP 1991-509344	19910320
ES 2094224	T3	19970116	ES 1991-910056	19910320
JP 07509565	T2	19951019	JP 1993-505280	19930610
EP 727038	A1	19960821	EP 1993-915341	19930610
R: ES, FR, GB, IT, SE				

PRIORITY APPLN. INFO.:

US 1992-924343	19920731
EP 1991-910056	19910320
WO 1991-US1781	19910320
WO 1993-US5673	19930610

AB Methods for analyzing an optical surface for an analyte of interest in a test sample and related instruments/devices are disclosed. The method entails the use of a thin-film optical immunoassay device whereby an analyte of interest is detected in a test sample through spectral changes in the light impinging on the surface prior to and after the binding of the analyte to a reactive substrate layer(s). The device includes a substrate which has a 1st color in response to light impinging thereon. The substrate also exhibits a 2nd color which is different from the 1st color. The 2nd color is exhibited

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in response to the same light when the analyte is present on the surface. Thus, SiO was vapor deposited on a polished monocryst. Si wafer to a thickness of 550 .ANG.; the film had a golden interference color. The film was activated with N-(2-aminoethyl)-3-aminopropyltrimethoxysilane, coated with a DNP-albumin conjugate to a thickness of 40.ANG., rinsed, and dried. The coated wafer was used in a competitive immunoassay for DNP using goat anti-DNP antibody and an ellipsometer to measure the change in mass at the surface from the change in light intensity.

L13 ANSWER 13 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1992:231340 CAPLUS

DOCUMENT NUMBER: 116:231340

TITLE: Biologically active reagents prepared from carboxy-containing polymer particles for affinity chromatography, immunoassays, and other specific binding assays

INVENTOR(S): Sutton, Richard Calvin; Danielson, Susan Jean; Findlay, John Bruce; Oakes, Fred Terry; Oenick, Marsha Denise Bale; Ponticello, Ignazio S.; Warren, Harold Chester

PATENT ASSIGNEE(S): Eastman Kodak Co., USA

SOURCE: Eur. Pat. Appl., 53 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 462644	A1	19911227	EP 1991-201420	19910610
EP 462644	B1	19951018		
R: AT, BE, CH, DE, DK, FR, GB, IT, LI, LU, NL, SE				
US 5147777	A	19920915	US 1990-539774	19900618
CA 2043089	AA	19911219	CA 1991-2043089	19910523
AT 129347	E	19951115	AT 1991-201420	19910610
FI 9102960	A	19911219	FI 1991-2960	19910618
JP 04339808	A2	19921126	JP 1991-242886	19910618
JP 07017697	B4	19950301		
US 5262297	A	19931116	US 1992-876672	19920430
US 5278267	A	19940111	US 1992-56045	19921221

PRIORITY APPLN. INFO.:

US 1990-539774 19900618  
US 1991-654112 19910212  
US 1992-856279 19920323

AB Biol. active reagents are prepd. from particles of copolymers having highly reactive carboxy or equiv. groups. The reagents are prepd. by covalently attaching biol. active substances, e.g. antibodies, to the particles, directly or indirectly, through highly

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reactive carboxy groups on the particle surface. These reagents are used in anal. elements, in immunoassays and other specific binding assays such as nucleic acid hybridization assays, and in affinity chromatog. Goat anti-human chorionic gonadotropin (hCG) .alpha.-chain antibodies were coupled to particles of poly[styrene-co-3-(p-vinylbenzylthio)propionic acid] using 1-(1-pyrrolidinylcarbonyl)pyridinium chloride as the activating agent and used in an immunoassay for hCG. A very low concn. of hCG (50 mIU) could be detected with 0 background. Prepn. of reagents and assays for DNA for human immunodeficiency virus 1, .beta.-globin, and cytomegalovirus are also described as are immunoassay elements for thyroxine, etc.

L13 ANSWER 14 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1991:425692 CAPLUS

DOCUMENT NUMBER: 115:25692

TITLE: Modification of cell-wall **proteins** of **group A streptococci**

, **type M 29**, under the action of spermidine contained in the culture medium  
AUTHOR(S): Bitko, S. A.; Shikhman, A. R.; Dynga, L. O.

CORPORATE SOURCE: Mosk. Med. Akad., Moscow, USSR

SOURCE: Zh. Mikrobiol., Epidemiol. Immunobiol. (1991),  
(2), 4-7

CODEN: ZMEIAV; ISSN: 0372-9311

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The addn. of spermidine into growth medium used for the cultivation of **group A streptococci, type M 29**, leads to changes in the amino acid compn. of cell walls and surface **proteins** isolated by the method of E. H. Beachey et al. The sepn. of surface **proteins** into fibrinogen-binding **proteins** and fibrinogen receptors by affinity chromatog. techniques on cellulose with **covalently** bound fibrinogen indicates that the proportion of these **proteins** in pepsin exts. obtained from different strains varies. Both spermidine and avirulent strains have similar content of fibrinogen-binding **proteins**, although these **proteins** are absent in virulent strains. Different amts. of fibrinogen receptors are extd. from all strains. As shown in the enzyme immunoassay, fibrinogen receptors contain no group-specific **polysaccharide A**, Fe-receptors and interact with total antiserum to **group A streptococci, type M 28**. Fibrinogen receptors isolated from the strains under study have been found to have similar amino acid compn. It was concluded that neither receptor capacity to fibrinogen nor amino acid compn. is indicative of the protective properties of **protein M**.

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L13 ANSWER 15 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1990:513477 CAPLUS  
DOCUMENT NUMBER: 113:113477  
TITLE: Cytologic assessment of nuclear and cytoplasmic  
O-linked N-acetylglucosamine  
distribution by using anti-streptococcal  
monoclonal antibodies  
AUTHOR(S): Turner, J. R.; Tartakoff, A. M.; Greenspan, N.  
S.  
CORPORATE SOURCE: Inst. Pathol., Case West. Reserve Univ.,  
Cleveland, OH, 44106, USA  
SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1990), 87(15),  
5608-12  
CODEN: PNASA6; ISSN: 0027-8424  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Recent studies have demonstrated the existence of single O-linked N-acetylglucosamine (O-GlcNAc) residues on cytoplasmic and nuclear glycoproteins. Previously, monoclonal antibodies (mAbs) were described specific for the GlcNAc residues of **streptococcal group A** carbohydrate, which is composed of a polyrhamnose backbone with GlcNAc side chains. The authors now report that these mAbs recognize O-GlcNAc-bearing **proteins**. By immunofluorescence, the mAbs reacted strongly with the nuclear periphery and nucleoplasm of mammalian cells and stained the cytoplasm less intensely. The distribution was not consistent with labeling of the endoplasmic reticulum, Golgi complex, or plasma membrane. Furthermore, the staining pattern of a mutant cell line, which retains terminal GlcNAc residues on many N-linked glycans, was indistinguishable from that of wild-type cells. Nuclear and cytoplasmic staining were inhibited by free GlcNAc and were completely abolished by galactosylation of terminal GlcNAc residues. Indirect ELISA demonstrated GlcNAc- and galactosylation-inhibitable binding of the mAbs to a 65-kDa human erythrocyte cytosolic **protein** known to contain O-GlcNAc. Thus, these mAbs react with O-GlcNAc without apparent influence of peptide determinants, do not show detectable binding to N- or O-glycans, and, therefore, represent a valuable tool for the study of O-GlcNAc moieties. In addn., these mAbs provide a cytol. anal. of the distribution of O-GlcNAc residues throughout the nucleus and the cytoplasm of mammalian cells.

L13 ANSWER 16 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1990:232356 CAPLUS  
DOCUMENT NUMBER: 112:232356  
TITLE: Study on the composition of cell walls in  
**group A streptococci**  
after successive hydrolysis with muramidase of  
Searcher : Shears 308-4994

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AUTHOR(S): Streptomyces levoris  
Shmakova, Z. F.; Savel'ev, E. P.; Kuznetsov, V.  
D.; Dynga, L. O.  
CORPORATE SOURCE: I MMI im. Sechenova, Moscow, USSR  
SOURCE: Antibiot. Khimioter. (1989), 34(11), 827-30  
CODEN: ANKHEW; ISSN: 0235-2990  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

AB The aim of the expt. was to study the lysis products of cell walls of **group A streptococci** resulting from exposure to N-acetylmuramidase. For isolating surface **proteins** free of **polysaccharide** and peptidoglycan fragments it was necessary to treat the streptococcal cell walls with endo-.beta.-N-acetylmuramidase for no more than 30 min. Prolonged hydrolysis with muramidase led to the presence of **polysaccharide** and the peptidoglycan fragments in the **protein** fractions, intracellular wall **proteins** covalently bound to the peptidoglycan fragments and **polysaccharide** being also released.

L13 ANSWER 17 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1988:201350 CAPLUS  
DOCUMENT NUMBER: 108:201350  
TITLE: Heterogeneous anti-enzyme antibody immunoassay for the detection of a variety of analytes  
INVENTOR(S): Hossom, Miles G.  
PATENT ASSIGNEE(S): Murex Corp., USA  
SOURCE: PCT Int. Appl., 28 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8706006	A1	19871008	WO 1987-US571	19870319
W: AU, BR, FI, JP				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
AU 8772380	A1	19871020	AU 1987-72380	19870319
CA 1289874	A1	19911001	CA 1987-532968	19870325
PRIORITY APPLN. INFO.:			US 1986-844067	19860326
			WO 1987-US571	19870319

AB A method for the detection and quantitation of an analyte in a sample uses two anti-analytes and an anti-indicator binding component. The 1st capture binding component is linked to a solid phase; the 2nd is attached to the 3rd. In a reaction mixt. a 1st binding component-analyte-second-third binding component complex is produced, which interacts with a signal substance. The

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binding of a signal substance to the third component results in its inhibition. The resultant signal output is inversely proportional to the amt. of analyte in the sample. Human chorionic gonadotropin (hCG) was detected by an immunoassay in which anti-hCG monoclonal antibody (Mab-2) and anti-alk. phosphatase (ALP) monoclonal antibody (Mab3-ALP) were first conjugated. One drop of insolubilized Mab-1, one drop of sample contg. hCG, and one drop of Mab2-Mab3-ALP conjugate were mixed and incubated. The mixt. was added to a filter, then washed with a buffer. ALP and indoxyl phosphate were added to the insolubilized complex simultaneously. The reaction zone contg. the components was read and the decreased rate of color formation was considered as indicative for the presence of hCG.

L13 ANSWER 18 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1985:94073 CAPLUS

DOCUMENT NUMBER: 102:94073

TITLE: Murine V.kappa.21A isotype sequence: monoclonal antibody 50S10.1 specific for the group

**A streptococcal polysaccharide**

AUTHOR(S): Aebersold, Ruedi; Herbst, Hermann; Chang, Jui Yoa; Braun, Dietmar G.

CORPORATE SOURCE: Pharm. Res. Lab., Ciba-Geigy Ltd., Basel, CH-4002, Switz.

SOURCE: Hoppe-Seyler's Z. Physiol. Chem. (1984), 365(12), 1385-91

CODEN: HSZPAZ; ISSN: 0018-4888

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Antibody 50S10.1 is a hybridoma-derived .gamma.3.kappa. antibody of BAB-14 mouse strain origin, with specificity for N-acetylglucosamine .beta.1.fwdarw.3 linked to L-rhamnose, the immunodeterminant of the **streptococcal Group**

**A polysaccharide.** The light chain variable region (VL) 50S10.1 amino acid sequence is the 4th complete one reported with this specificity and the 1st fully detd. V.kappa. 21A structure. Furthermore it is the 1st V.kappa. 21A isotype sequence derived from an antibody with known antigen specificity. The V.kappa. region of this and the previously described monoclonal anti-**streptococcal Group a polysaccharide** antibodies 7S34.1, 2S1.3 and 17S29.1 are compared, showing that in monoclonal antibody 50S10.1 a V.kappa. germline gene is expressed which is unrelated to those previously shown to be expressed in antibodies of this specificity. V.kappa. 50S10.1 increase the variability of known murine V.kappa. regions and confirms stretches of V.kappa. 21A sequences previously established.

L13 ANSWER 19 OF 25 CAPLUS COPYRIGHT 2000 ACS

Searcher : Shears 308-4994

09/207188

ACCESSION NUMBER: 1985:94072 CAPLUS  
DOCUMENT NUMBER: 102:94072  
TITLE: Murine V.kappa.25 and V.kappa.27 amino acid  
sequences of C57B1/6 origin: monoclonal  
antibodies 17S29.1 and 22S25.1 specific for the  
**group A-streptococcal  
polysaccharide**  
AUTHOR(S): Aebersold, Ruedi; Herbst, Hermann; Gruetter,  
Thomas; Chang, Jui Yoa; Braun, Dietmar G.  
CORPORATE SOURCE: Pharm. Res. Lab., Ciba-Geigy Ltd., Basel,  
CH-4002, Switz.  
SOURCE: Hoppe-Seyler's Z. Physiol. Chem. (1984),  
365(12), 1375-83  
CODEN: HSZPAZ; ISSN: 0018-4888  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Antibodies 17S29.1 and 22S25.1 are monoclonal, hybridoma-derived  
.gamma.3.kappa. murine Igs with specificity for N-acetyl-glucosamine  
.beta.1.fwdarw.3-linked to the L-rhamnose backbone  
structure, the immunodeterminant of the **streptococcal  
group A polysaccharide**. The light chain  
variable region (VL) 17S29.1 amino-acid sequence is the 3rd complete  
one reported from an antibody with this specificity, the 2nd fully  
detd. V.kappa.25 structure, and the 1st complete V.kappa. sequence  
of C57B1/6 origin derived from a carbohydrate-specific antibody. VL  
22S25.1 is a member of the V.kappa.27 isotype of murine Ig VL  
regions. V.kappa.17S29.1 and the detd. part of the V.kappa.22S25.1  
sequence are compared to the previously described V.kappa. regions  
of **streptococcal group A  
polysaccharide**-specific antibodies and to 12 selected  
partial and complete V.kappa. regions of antibodies with other  
specificities, predominantly to carbohydrate antigens. Both  
V.kappa.17S29.1 and V.kappa.22S25.1 increase the variability of  
known murine V.kappa. regions. They are the most homologous to the  
other V.kappa. regions derived from antibodies with  
**streptococcal group A  
polysaccharide** specificity and share with them the  
amino-acid residue arginine74, so far characteristic for V.kappa.  
regions from antibodies with this specificity.

L13 ANSWER 20 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1983:609061 CAPLUS  
DOCUMENT NUMBER: 99:209061  
TITLE: A new method for the selective isolation of  
cysteine-containing peptides. Specific labeling  
of the thiol group with a hydrophobic  
chromophore  
AUTHOR(S): Chang, Jui Yoa; Knecht, Rene; Braun, Dietmar G.  
CORPORATE SOURCE: Pharm. Res. Lab., Ciba-Geigy Ltd., Basel,  
Searcher : Shears 308-4994

09/207188

SOURCE: CH-4002, Switz.  
Biochem. J. (1983), 211(1), 163-71  
CODEN: BIJOAK; ISSN: 0306-3275

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new method for the selective isolation of cysteine-contg. peptides was designed which was based on the specific labeling of thiol groups with a hydrophobic chromophore followed by enzymic fragmentation of the labeled **protein** and reversed-phase high-pressure liq.-chromatog. sepn. of the peptide mixt. Only cysteine-contg. peptides are detected in the visible region with sensitivity at the low picomole level; this high sensitivity allows isolation of nanogram amts. of pure cysteine-contg. peptide. During sequence detn. of the chromophore-labeled cysteine-contg. peptides, the cysteine residues are released as colored anilinothiazolinone derivs. and can be detected directly in the picomole range. With **proteins** bearing several disulfide groups, each disulfide group may undergo a different degree of redn., and therefore the recovery of individual cysteine-contg. peptides may be used to deduce the disulfide **links** present in the native **protein**. Two thiol-specific reagents, 4-methylaminoazobenzene 4'-iodoacetamide and 4-dimethylaminoazobenzene 4'-N-maleimide, were synthesized and characterized. The method was successfully used to isolate 5 cysteine-contg. peptides from a completely reduced monoclonal-antibody .kappa.-light chain raised against the azobenzenearsonate determinant and 6 cysteine-contg. peptides from a .kappa.-light chain raised against **streptococcal group A polysaccharide**. The principle of this method is applicable to the isolation of any peptide contg. amino acid residues that can be specifically labeled with a hydrophobic chromophore.

L13 ANSWER 21 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1982:579912 CAPLUS

DOCUMENT NUMBER: 97:179912

TITLE: Murine V.kappa.25 isotype sequence: monoclonal antibody 2S1.3 specific for the **group A streptococcal polysaccharide**

AUTHOR(S): Herbst, Hermann; Chang, Jui Yoa; Aebersold, Ruedi; Braun, Dietmar G.

CORPORATE SOURCE: Pharm. Res. Lab., Ciba-Geigy Ltd., Basel, Switz.

SOURCE: Hoppe-Seyler's Z. Physiol. Chem. (1982), 363(9), 1069-76  
CODEN: HSZPAZ; ISSN: 0018-4888

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Antibodies 2S1.3 and 2S1.1 are hybridoma derived .gamma.3.kappa. murine Igs with specificity for N-acetylglucosamine

Searcher : Shears 308-4994

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.beta.1.fwdarw.3-linked to L-rhamnose, the immunodeterminant of the **streptococcal group A polysaccharide**. The light chain variable region VL 2S1.3 amino acid sequence is the second complete one reported with this specificity, and it is the first fully detd. V.kappa.25 structure. The V.kappa. regions of this and the previously described monoclonal anti-A-CHO antibody 7S34.1 are compared with 17 selected partial and complete murine V.kappa. regions, preferentially from antipolysaccharide antibodies. Both V.kappa. 2S1.3 and 7S34.1 increase the variability of existing murine V.kappa. regions; however, they are, as anti-A-CHO antibodies, most homologous to each other sharing the so far unique residue arginine 74. The amino acid sequence of the const. region of 2S1.3 light chain was also detd. It was identical with that of MOPC21, but different from MOPC41 and MOPC70 in residue positions 127, 129, 163, and 166.

L13 ANSWER 22 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1973:513752 CAPLUS

DOCUMENT NUMBER: 79:113752

TITLE: Host-parasite cross immunological reactions.  
Special case of **group A streptococci**

AUTHOR(S): Goldstein, I.

CORPORATE SOURCE: Lab. Streptocoque, Cent. Int. Enfance, Paris, Fr.

SOURCE: Rev. Immunol. (1972), 36(6), 203-66  
CODEN: RIMMAZ

DOCUMENT TYPE: Journal

LANGUAGE: French

AB G. studied two categories of antigens: glycoproteins from coronary valve and glycopeptide of **Streptococcus group A**. Sol. glycoprotein extd. by a buffer contained 9.6% sugar, 19% hexosamines, 4.2% sialic acid, and 6.5% uronic acids, together with their sulfate esters. Electrophoretic migration showed an alpha2 seric glycoprotein, mol. wt. 100,000. Buffer-insol. glycoprotein, extd. by urea, contained 10% monosaccharides, 6.5% hexosamines, traces of sialic and uronic acids. The compn. of the peptidic copula was similar in each case. Because of the identical immunol. behavior of the two glycoproteins it is assumed there is a single mol. developed biochem. In the case of **Streptococcus**, the antigen involved in cross reaction is the **polysaccharide** of the cell wall. It is a polymer of rhamnose and N-acetylglucosamine, the latter sugar being at the end of the chain and characteristic of the A group. Through muramic acid it is bound to the peptidic copula principally made up of alanine, lysine, and glutamic acid. The method used (hot formamide extn.) enabled the obtainment of a pure **polysaccharide** free from muramic acid and peptides. The remaining residue was

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partially sol. in 8M urea and a peptoglycan with considerable glucosamine residues was found at the end of the chain. The **polysaccharide** is a hapten which is neither antigenic nor pathogenic. It becomes antigenic in combination with **proteins** in the walls or artificially coupled with edestin. In the course of the immunization of rabbits with Streptococcus A, at about the tenth day antibodies appeared which showed an immunopptn. with streptococcal antigens, but at the same time reacted with glycoproteins from connective tissue. This cross reaction affected about 1/4 of the antibodies. The same phenomenon was observed in rabbits immunized with the edestin-**polysaccharide** complex but cross reaction was not observed with the Ls forms of streptococci which are characterized by the absence of cell walls. Glycoproteins extd. from connective tissue, particularly sol. glycoproteins, are very antigenic. Digestion of urea-sol. glycoprotein by pronase enabled the isolation of the active portion of this antigen. It is rich in monosaccharides, esp. glucosamine, and reacts with both types of sera (antivulvular and antistreptococcal A). The function of the carbohydrate link of both antigens was also demonstrated by means of immunopptn. inhibition. On using simple sugars as inhibitors, glucosamine function was shown in both cases. A recently isolated glycoprotein bound to purine base in the cytoplasm of Streptococcus A appeared to be a metabolic precursor of parietal glycopeptide. In all these cases the presence of N-acetylglucosamine was the common denominator and the explanation for cross immunol. reaction.

L13 ANSWER 23 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1973:475662 CAPLUS

DOCUMENT NUMBER: 79:75662

TITLE: Extraction, purification, chemical and immunological properties of the **Streptococcus mutans** group a **polysaccharide** cell wall antigen

AUTHOR(S): Mukasa, Hidehiko; Slade, Hutton D.

CORPORATE SOURCE: Med. Sch., Northwest. Univ., Chicago, Ill., USA

SOURCE: Infec. Immunity (1973), 8(2), 190-8  
CODEN: INFIBR

DOCUMENT TYPE: Journal

LANGUAGE: English

AB. An antigen of S. mutans was extd. from HS6 (group a) whole cells and repeatedly fractionated by Sephadex chromatog. The antigen was a **polysaccharide** and contained the S. mutans group a antigenic site and also a 2nd antigenic site which was common to a strains and 2 of 3 group d strains. Immunol. electrophoretic and chromatog. data indicated that the 2 sites exist in a single mol. The **polysaccharide** had a mol. wt. of 107,000 and was composed of glucose, galactose, glucosamine, and galactosamine. No significant

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quantities of lipid, P, glycerol, or ribitol were present. Immunol. specificity of the group a **polysaccharide** site depended primarily on a D-glucose-D-glucose sequence, the a-d site on a terminal D-galactose. Water at 100.degree. and pepsin (pH 2.5) were very effective in extg. the **polysaccharide** from lyophilized S. mutans cells. Trypsin and lysozyme were less effective. The antigen-antibody combining site appeared to be located at the cell wall surface. A small quantity of enzyme-resistant **protein** (5%) was firmly linked to the antigen and was considered to be a remnant of a **protein** to which the **polysaccharide** was attached in the cell wall. The compn. of the **protein** did not identify it as a part of the peptidoglycan. No reaction to the purified **polysaccharide** was obtained with antisera for teichoic acid glycerophosphate polymers from streptococci, staphylococci, or lactobacilli.

L13 ANSWER 24 OF 25 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1971:30385 CAPLUS

DOCUMENT NUMBER: 74:30385

TITLE: Immunochemical studies on a mouse myeloma **protein** with specificity for certain

.beta.-linked terminal residues of N-acetyl-D-glucosamine

AUTHOR(S): Vicari, Giuseppe; Sher, Alan; Cohn, Melvin; Kabat, Elvin A.

CORPORATE SOURCE: Dep. Microbiol., Columbia Univ., New York, N. Y., USA

SOURCE: Immunochemistry (1970), 7(10), 829-38  
CODEN: IMCHAZ

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A transplantable BALB/c mouse plasmacytoma, S 117, produces an immunoglobulin with specificity for terminal nonreducing .beta.-linked N-acetyl-D-glucosamine (D-GNAC). The immunoglobulin is of the IgA class and possesses a k light chain. It ppts. with blood group H substance after the 1st and 3rd stages of periodate oxidn. and Smith degradation, with .beta.-teichoic acid and with **streptococcus Group A polysaccharide** all of which have terminal nonreducing .beta.-D-GNAC residues. The differences in the amts. of specific ppt. obtained with the various **polysaccharides** are discussed in relation to evaluating homogeneity of the reactive sites. Inhibition expts. confirmed the specificity for terminal nonreducing .beta.-linked D-GNAC determinants; the best disaccharide inhibitor tested was .beta.-D-GNAC-(1 .fwdarw. 3)-D-Gal.

L13 ANSWER 25 OF 25 CAPLUS COPYRIGHT 2000 ACS

Searcher : Shears 308-4994

09/207188

ACCESSION NUMBER: 1968:473964 CAPLUS  
DOCUMENT NUMBER: 69:73964  
TITLE: The **protein-carbohydrate**  
**linkages** of acid mucopolysaccharides  
AUTHOR(S): Roden, Lennart  
CORPORATE SOURCE: Univ. of Chicago, Chicago, Ill., USA  
SOURCE: Chem. Physiol. Mucopolysaccharides, Proc. Symp.,  
Milan (1968), Volume Date 1965 17-32  
CODEN: 20CLA9  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Old and new data are interpreted, with stress on the chondroitin 4-sulfate-**protein** complex (I). A scheme is shown for the enzymic degradation of I from bovine nasal septa. Papain was used to split the **protein** and testicular hyaluronidase to break down the **polysaccharide** moieties, and the resulting degradation products were characterized. The glycopeptide fraction contained uronic acid, hexosamine, D-galactose, and D-xylose. The presence of the latter 2 constituents indicated that the structure of the carbohydrate-**protein linkage** region was more complicated than anticipated. Much of the hexosamine was glucosamine. A glycopeptide B fraction (II) contained glucuronic acid, galactosamine, galactose, and xylose in the mol. ratio of 2:1:2:1. It was possible that galactose and xylose constituted a specific bridge structure between chondroitin sulfate and serine. Paper chromatog. after acid hydrolysis of II gave products indicating that the xylosidic **linkage** had a .beta.-configuration. Data were obtained on the constitution of the galactosylxylosylserine, galactosylgalactosylxylose, and glucuronosylgalactose fractions. In expts. on acidic mucopolysaccharides other than I, hyaluronic acid (III) from **group A streptococci** contained only traces of amino acids, while III from mammals contained appreciable amts. of **protein**. Dermatan sulfate (chondroitin sulfate B) (IV) contained approx. equal amts. of glycine, alanine, serine, and aspartic and glutamic acids, plus xylose and galactose. IV differed from chondroitin 4-sulfate and chondroitin 6-sulfate in its reactions with alkali. 41 references.

(FILE 'MEDLINE, BIOSIS, EMBASE, JAPIO, JICST-EPLUS, TOXLIT, TOXLINE, PHIC, PHIN' ENTERED AT 14:44:04 ON 13 JUN 2000)

L14 77 S L11 OR L12  
L15 77 S L14 NOT L6  
L16 39 DUP REM L15 (38 DUPLICATES REMOVED)

L16 ANSWER 1 OF 39 MEDLINE DUPLICATE 1  
ACCESSION NUMBER: 1999043914 MEDLINE  
DOCUMENT NUMBER: 99043914  
TITLE: Estimation of group B streptococcus type III  
Searcher : Shears 308-4994

09/207188

**polysaccharide-specific antibody**

concentrations in human sera is antigen dependent.

AUTHOR: Bhushan R; Anthony B F; Frasci C E  
CORPORATE SOURCE: Division of Bacterial Products, Center for Biologics  
Evaluation and Research, Food and Drug  
Administration, Bethesda, Maryland 20892, USA.  
SOURCE: INFECTION AND IMMUNITY, (1998 Dec) 66 (12) 5848-53.  
Journal code: GO7. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals; Cancer Journals  
ENTRY MONTH: 199903  
ENTRY WEEK: 19990301

AB The presence of immunoglobulin G (IgG) antibodies against group B **streptococcus** (GBS) type III **polysaccharide** (PS) has been correlated with protection against GBS disease. The GBS type III PS is structurally similar to the pneumococcal type 14 PS, differing only in the presence of sialic acid residues. Four different preparations of GBS type III PS were evaluated for their specificity in enzyme-linked immunosorbent assay (ELISA): free PS, free PS mixed with methylated human serum albumin (mHSA), PS conjugated to biotin and PS conjugated to human serum albumin. Three groups of human sera were used to evaluate these PS preparations: sera from recipients of a GBS PS vaccine, sera from women receiving a GBS type III PS-tetanus toxoid conjugate vaccine, and sera from nonimmunized healthy women of childbearing age. Estimated antibody concentrations were different depending on the PS preparation used. Using any of the four preparations, we were able to measure  $\leq 0.05$  micrograms of IgG antibody to the GBS type III PS per ml. The specificity of the assay was determined by competitive inhibition with homologous and heterologous PS. The pneumococcal type 14 PS did not inhibit binding of antibody to the native GBS type III PS in sera from adults receiving the GBS PS vaccine or in sera from nonimmunized adults (except serum G9). The pneumococcal type 14 PS inhibited 50% in sera from recipients of GBS type III conjugate vaccine and in serum G9 when GBS type III PS conjugated to biotin or to HSA was used as antigen in ELISA. These data show that free GBS type III PS or PS mixed with mHSA is a sensitive and specific antigen for ELISA and that conjugation can alter the antigenic specificity of a PS.

L16 ANSWER 2 OF 39 MEDLINE

DUPLICATE 2

ACCESSION NUMBER: 1998261540 MEDLINE

DOCUMENT NUMBER: 98261540

TITLE: Isotypes and opsonophagocytosis of pneumococcus type 6B antibodies elicited in infants and adults by an experimental pneumococcus type 6B-tetanus toxoid vaccine.

Searcher : Shears 308-4994

09/207188

AUTHOR: Vidarsson G; Sigurdardottir S T; Gudnason T;  
Kjartansson S; Kristinsson K G; Ingolfsson G;  
Jonsson S; Valdimarsson H; Schiffman G; Schneerson R;  
Jonsdottir I  
CORPORATE SOURCE: Departments of Immunology, Reykjavik, Iceland.  
SOURCE: INFECTION AND IMMUNITY, (1998 Jun) 66 (6) 2866-70.  
Journal code: GO7. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
(CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals; Cancer Journals  
ENTRY MONTH: 199808  
ENTRY WEEK: 19980804

AB **Streptococcus pneumoniae** is a major respiratory pathogen of infants, children, and the elderly. **Polysaccharide** vaccines have been useful in adult populations but do not elicit protective immunity in infants and young children. To enhance their immunogenicity, vaccines of pneumococcal **polysaccharides** conjugated to **proteins** are being developed. In this study antibody levels and opsonic activities were compared in sera of infants and adults injected with pneumococcal **polysaccharide** type 6B (Pn6B) conjugated to tetanus **toxoid** (TT) (Pn6B-TT). Healthy infants were injected with Pn6B-TT; **group A** was injected at 3, 4, and 6 months of age, and **group B** was injected at 7 and 9 months of age. A booster injection was given at 18 months. Adults were injected once. Antibodies were measured by enzyme-linked immunosorbent assay and radioimmunoassay, and their functional activities were measured by opsonophagocytosis of radiolabelled pneumococci. In adults, increases in immunoglobulin M (IgM), IgG, IgA, IgG1, and IgG2 to Pn6B were observed. Infants reached adult levels of IgG1 anti-Pn6B after the primary injections. After the booster injection the infant groups had total IgG- and IgM-Pn6B antibody levels similar to those of adults. After the booster injection, IgG1 was the dominant infant anti-Pn6B isotype and at a level higher than in vaccinated adults, but IgA and IgG2 antibodies remained at very low levels. Opsonic activity increased significantly after Pn6B-TT injections; the highest infant sera showed opsonic activity comparable to that of vaccinated adults. Overall, opsonic activity correlated best with total and IgG anti-Pn6B antibodies ( $r = 0.741$ ,  $r = 0.653$ , respectively;  $n = 35$ ) and was highest in sera with high levels of all Pn6B antibody isotypes. The results indicate the protective potential of a pneumococcal 6B **polysaccharide protein** conjugate vaccine for young infants.

L16 ANSWER 3 OF 39 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 1998363790 EMBASE

TITLE: Localization and secretion of tissue kallikrein in  
Searcher : Shears 308-4994

09/207188

AUTHOR: peptidoglycan- induced enterocolitis in Lewis rats.  
Stadnicki A.; Chao J.; Stadnicka I.; Van Tol E.; Lin  
K.-F.; Li F.; Sartor R.B.; Colman R.W.  
CORPORATE SOURCE: R.W. Colman, Sol Sherry Thrombosis Res. Center,  
Temple Univ. School of Medicine, 3400 N. Broad St.,  
Philadelphia, PA 19140, United States  
SOURCE: American Journal of Physiology - Gastrointestinal and  
Liver Physiology, (1998) 275/4 38-4 (G854-G861).  
Refs: 45  
ISSN: 0193-1857 CODEN: APGPDF  
COUNTRY: United States  
DOCUMENT TYPE: Journal; Article  
FILE SEGMENT: 005 General Pathology and Pathological Anatomy  
LANGUAGE: English  
SUMMARY LANGUAGE: English

AB The plasma kallikrein-kinin system is a mediator of intestinal  
inflammation induced by peptidoglycan-**polysaccharide** from  
**group A streptococci** (PG-APS) in rats.  
In this study we investigated the participation of intestinal tissue  
kallikrein (ITK). Lewis rats were injected intramurally with PG-APS.  
ITK was visualized by immunohistochemical staining. Cecal ITK  
concentration was measured by radioimmunoassay, and gene expression  
was evaluated by RNase protection assay. Kallikrein-binding  
**protein** (KBP) was evaluated in plasma by ELISA. Tissue  
kallikrein was identified in cecal goblet cells in both control and  
PG-APS-injected rats and in macrophages forming granulomas in  
inflamed tissues. Cecal ITK was significantly lower in acute and  
chronic phases of inflammation and in supernatant from in vitro  
cultures of inflamed cecum. ITK mRNA levels were not significantly  
different. Plasma KBP levels were significantly reduced in inflamed  
rats. The presence of tissue kallikrein in macrophages suggests  
participation in experimental colitis. The decrease of ITK in the  
inflamed intestine associated with unchanged mRNA levels suggests  
ITK release during intestinal inflammation.

L16 ANSWER 4 OF 39 MEDLINE DUPLICATE 3  
ACCESSION NUMBER: 97383802 MEDLINE  
DOCUMENT NUMBER: 97383802  
TITLE: Immune responses of infants vaccinated with serotype  
6B pneumococcal **polysaccharide** conjugated  
with tetanus **toxoid**.  
AUTHOR: Sigurdardottir S T; Vidarsson G; Gudnason T;  
Kjartansson S; Kristinsson K G; Jonsson S;  
Valdimarsson H; Schiffman G; Schneerson R; Jonsdottir  
I  
CORPORATE SOURCE: Department of Immunology, National University  
Hospital, Reykjavik, Iceland.  
SOURCE: PEDIATRIC INFECTIOUS DISEASE JOURNAL, (1997 Jul) 16  
(7) 667-74.

Searcher : Shears 308-4994

09/207188

JOURNAL code: OXJ. ISSN: 0891-3668.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199711  
ENTRY WEEK: 19971101

AB BACKGROUND: **Streptococcus pneumoniae** is a major cause of meningitis, bacteremia, pneumonia and otitis media. Pneumococcal **polysaccharides** are not immunogenic in infants, but improved immunogenicity of **polysaccharide-protein** conjugates has been demonstrated. Antibiotic-resistant pneumococci have increased the need for an effective vaccine. OBJECTIVE: To study the safety and immunogenicity of a pneumococcal **type 6B polysaccharidetetanus toxoid** conjugate (Pn6B-TT) in infants and to assess the function of antibodies. METHODS: Healthy infants were injected, **Group A** at 3, 4 and 6 months (n = 21) and **Group B** at 7 and 9 months (n = 19). Booster injection was given at 18 months. Antibodies were measured by enzyme-linked immunosorbent assay and radioimmunoassay, and functional activity was measured by opsonization of radiolabeled pneumococci. Nasopharyngeal cultures were obtained. RESULTS: No significant adverse reactions were observed. Pn6B-IgG (enzyme-linked immunosorbent assay) increased to a geometric mean of 0.62 microgram/ml (P = 0.367, compared with prevaccination titers) in **Group A** at 7 months and 1.22 micrograms/ml (P < 0.001) in **Group B** at 10 months. Total Pn6B antibodies (radioimmunoassay) were 44 ng of antibody N/ml (P < 0.053) in **Group A** and 211 ng of antibody N/ml (P < 0.001) in **Group B**. A smaller increase in IgM and IgA anti-Pn6B was observed. Reinjection at 18 months elicited booster responses in total and IgG anti-Pn6B; 62% of those in **Group A** and 79% of those in **Group B** had > 300 ng of antibody N/ml. Opsonic activity, after initial and booster vaccinations, correlated with Pn6B-antibody titers. Three infants with nasopharyngeal cultures repeatedly positive for serogroup 6 had poor serum IgG responses. CONCLUSION: Our results demonstrate that Pn6B-TT is safe, elicits functional antibodies and memory responses in infants.

L16 ANSWER 5 OF 39 MEDLINE

DUPLICATE 4

ACCESSION NUMBER: 97159767 MEDLINE

DOCUMENT NUMBER: 97159767

TITLE: Preparations of antigens and immunoadsorbents  
corresponding to the **Streptococcus**  
**group A** cell-wall  
**polysaccharide**.

AUTHOR: Auzanneau F I; Pinto B M

CORPORATE SOURCE: Department of Chemistry, Simon Fraser University,  
Searcher : Shears 308-4994

09/207188

SOURCE: Burnaby, British Columbia, Canada.  
BIOORGANIC AND MEDICINAL CHEMISTRY, (1996 Nov) 4 (11)  
2003-10.  
Journal code: B38. ISSN: 0968-0896.  
PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199706  
ENTRY WEEK: 19970602

AB The allyl glycosides of a tri-, penta- and hexasaccharide corresponding to the **Streptococcus Group** A cell-wall polysaccharide were coupled to solid or soluble supports to give immunoaffinity columns and neoglycoproteins, respectively. Cysteamine hydrochloride was added to the allyl glycosides and the resulting cysteamine adducts were used for subsequent coupling to linkers via the amine functionality. The tri- and penta-saccharide cysteamine adducts were coupled directly to the azalactone-derivatized 3M Emphase Biosupport Medium AB 1 to yield two affinity columns. The penta- and hexasaccharides were coupled to bovine serum albumin or ovalbumin via the conjugate addition of the epsilon-amino groups of lysines on the proteins with the N-acryloylated sugars or the oligosaccharide-squarate adducts, derived in turn from the cysteamine adducts. The efficiency of the above methods is compared.

L16 ANSWER 6 OF 39 TOXLIT

ACCESSION NUMBER: 1996:31626 TOXLIT

DOCUMENT NUMBER: CA-124-066569C

TITLE: **Group A streptococcal polysaccharide immunogenic compositions and methods.**

AUTHOR: Blake MS; Zabriskie JB; Tai JY; Michon F  
SOURCE: (1995). PCT Int. Appl. PATENT NO. 95 28960 11/02/95  
(Rockefeller University).

PUB. COUNTRY: United States

DOCUMENT TYPE: Patent

FILE SEGMENT: CA

LANGUAGE: English

OTHER SOURCE: CA 124:66569

ENTRY MONTH: 199602

AB This invention provides a novel immunogenic compn. and vaccine, processes for producing them and methods for immunization against infectious and disease caused by **group A Streptococci**. The compns. include **group A streptococcal polysaccharide covalently linked to protein** or liposomes to form immunogenic conjugates. The method of immunization for this invention comprises administering to an individual an immunogenic amt. of **group**

Searcher : Shears 308-4994

**A polysaccharide.** The **group A polysaccharide** may be administered as a vaccine either on its own, conjugated to **proteins** or conjugated to liposomes. Addnl., the **group A polysaccharides** may be assocd. with an adjuvant. This invention is particularly useful for providing both active and passive immunogenic protection for those populations most at risk of contracting **group A Streptococcal** infections and disease namely adults, pregnant women and in particular infants and children.

L16 ANSWER 7 OF 39 BIOSIS COPYRIGHT 2000 BIOSIS DUPLICATE 5  
 ACCESSION NUMBER: 1995:156655 BIOSIS  
 DOCUMENT NUMBER: PREV199598170955  
 TITLE: Molecular, genetic, and topological characterization of O-antigen chain length regulation in *Shigella flexneri*.  
 AUTHOR(S): Morona, Renato (1); Van Den Bosch, Luisa; Manning, Paul A.  
 CORPORATE SOURCE: (1) Microbial Pathogenesis Unit, Dep. Microbiol. and Immunol., Univ. Adelaide, Adelaide, SA 5005 Australia  
 SOURCE: Journal of Bacteriology, (1995) Vol. 177, No. 4, pp. 1059-1068.  
 ISSN: 0021-9193.  
 DOCUMENT TYPE: Article  
 LANGUAGE: English

AB The rfb region of *Shigella flexneri* encodes the **proteins** required to synthesize the O-antigen component of its cell surface lipopolysaccharides (LPS). We have previously reported that a region adjacent to rfb was involved in regulating the length distribution of the O-antigen **polysaccharide** chains (D. F. Macpherson et al., Mol. Microbiol. 5:1491-1499, 1991). The gene responsible has been identified in *Escherichia coli* 075 (called rol (R. A. Batchelor et al., J. Bacteriol. 173:5699-5704, 1991)) and in *E. coli* O111 and *Salmonella enterica* serovar typhimurium strain LT2 (called cld (D. A. Bastin et al., Mol. Microbiol. 5:2223-2231, 1991)). Through a combination of subcloning, deletion. and transposon insertion analysis, we have identified a gene adjacent to the *S. flexneri* rfb region which encodes a **protein** of 36 kDa responsible for the length distribution of O-antigen chains in LPS as seen on silver-stained sodium dodecyl sulfate-polyacrylamide gels. DNA sequence analysis identified an open reading frame (ORF) corresponding to the rol gene. The corresponding **protein** was almost identical in sequence to the Rol **protein** of *E. coli* O75 and was highly homologous to the functionally identical Cld **proteins** of *E. coli* O111 and *S. enterica* serovar typhimurium LT2. These **proteins**, together with ORF o349 adjacent to rfe, had almost identical hydropathy plots which predict membrane-spanning segments at the amino- and carboxy-terminal ends

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and a hydrophilic central region. We isolated a number of Tnp<sub>PhoA</sub> insertions which inactivated the *rol* gene, and the fusion end points were determined. The PhoA+ *Rol*::PhoA fusion **proteins** had PhoA fused within the large hydrophilic central domain of *Rol*. These **proteins** were located in the whole-membrane fraction. and extraction with Triton X-100 indicated a cytoplasmic membrane location. This finding was supported by sucrose density gradient fractionation of the whole-cell membranes and of *E. coli* maxicells expressing L-(35S) methionine-labelled *Rol* **protein**. Hence, we interpret these data to indicate that the *Rol* **protein** is anchored into the cytoplasmic membrane via its amino- and carboxy-terminal ends but that the majority of the **protein** is located in the periplasmic space. To confirm that *rol* is responsible for the effects on O-antigen chain length observed with the cloned *rfb* genes in *E. coli* K-12, it was mutated in *S. flexneri* by insertion of a kanamycin resistance cartridge. The resulting strains produced LPS with O antigens of nonmodal chain length, thereby confirming the function of the *rol* gene product. We propose a model for the function of *Rol* **protein** in which it acts as a **type** of molecular chaperone to facilitate the interaction of the O-antigen ligase (*RfaL*) with the O-antigen polymerase (*Rfc*) and polymerized, acyl carrier lipid-linked , O-antigen chains. Analysis of the DNA sequence of the region identified a number of ORFs corresponding to the well-known *gnd* and *hisIE* genes. The *rol* gene was located immediately downstream of two ORFs with sequence similarity to the gene encoding UDPglucose dehydrogenase (*HasB*) of *Streptococcus pyogenes*. The ORFs arise because of a deletion or frameshift mutation within the gene we have termed *udg* (for UDPglucose dehydrogenase).

L16 ANSWER 8 OF 39 MEDLINE DUPLICATE 6  
ACCESSION NUMBER: 95221994 MEDLINE  
DOCUMENT NUMBER: 95221994  
TITLE: Immunogenicity and protective activity in animals of  
a **type** V group B  
**streptococcal polysaccharide**  
-tetanus **toxoid** conjugate vaccine.  
AUTHOR: Wessels M R; Paoletti L C; Pinel J; Kasper D L  
CORPORATE SOURCE: Division of Infectious Diseases, Beth Israel  
Hospital, Boston, Massachusetts.  
CONTRACT NUMBER: AI-23339 (NIAID)  
AI-30628 (NIAID)  
AI-28040 (NIAID)  
+  
SOURCE: JOURNAL OF INFECTIOUS DISEASES, (1995 Apr) 171 (4)  
879-84.  
Journal code: IH3. ISSN: 0022-1899.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
Searcher : Shears 308-4994

09/207188

LANGUAGE: English  
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals  
ENTRY MONTH: 199507

AB The recent recognition of type V strains as a frequent cause of group B **streptococcal** (GBS) infection in both infants and adults prompted investigation of an effective vaccine against these organisms. Purified GBS type V **polysaccharide** was covalently linked to tetanus toxoid to form a type V **polysaccharide**-tetanus toxoid conjugate vaccine. The conjugate elicited type V **polysaccharide**-specific IgG antibodies in rabbits, while unconjugated type V **polysaccharide** did not. Conjugate-induced rabbit antibodies were opsonic in vitro and protected mice against challenge with type V GBS. Efficacy of the conjugate vaccine also was demonstrated in a maternal vaccination/neonatal challenge model in mice. A GBS type V **polysaccharide**-tetanus toxoid conjugate is an effective immunogen in animal models and may be a useful component for inclusion in a multivalent GBS vaccine for human use.

L16 ANSWER 9 OF 39 TOXLINE

ACCESSION NUMBER: 1995:208270 TOXLINE  
DOCUMENT NUMBER: CRISP-95-HD01301-12  
TITLE: HUMAN IMMUNE RESPONSE TO **POLYSACCHARIDE-PROTEIN** CONJUGATE VACCINES.

AUTHOR: SCHNEERSON R  
CORPORATE SOURCE: NICHD, NIH  
U.S. DEPT. OF HEALTH AND HUMAN SERVICES; PUBLIC HEALTH SERVICE; NATIONAL INST. OF HEALTH, NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT.  
CONTRACT NUMBER: 1Z01HD01301-12  
SOURCE: (1994). Crisp Data Base National Institutes Of Health. Award Type: A = Intramural Project  
DOCUMENT TYPE: (RESEARCH)  
FILE SEGMENT: CRISP  
LANGUAGE: English  
ENTRY MONTH: 199507

AB RPROJ/CRISP The surface **polysaccharides** of bacterial pathogens serve as protective antigens. Their immunologic properties, namely their age-related and T- independent immunogenicity, limit their use as vaccines. Covalent attachment to medically-useful **proteins** to form conjugates, both increases their immunogenicity and confers T-dependent properties to these **polysaccharides**. The capsular **polysaccharides** of **Streptococcus** pneumococcus types 6B and 14, **Staphylococcus aureus** types 5 and 8, Group B **streptococcus** type 3, **Haemophilus influenzae** type a and **Escherichia coli** K1 were bound to

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**proteins** and their immunologic properties assayed in mice. Pneumococcal type 6B and Group B **streptococcal** conjugates have been evaluated clinically. The safety of conjugate-induced antibodies reactive with E. coli K1 was evaluated in an infant rat model. LPSs of shigellae were detoxified, their O-specific **polysaccharides** bound to bacterial **toxoids** and their immunogenicity in mice found to be satisfactory. In Phase 1 and Phase 2 studies, these O-specific **polysaccharides** were safe and immunogenic: LPS antibody levels elicited by the investigational conjugates were similar to those in recruits convalescent from shigellosis. In preliminary studies, a S. sonnei-rEPA conjugate protected against shigellosis caused by this pathogen. Extensive efficacy trials are underway.

L16 ANSWER 10 OF 39 MEDLINE

DUPLICATE 7

ACCESSION NUMBER: 95048771 MEDLINE

DOCUMENT NUMBER: 95048771

TITLE: Nucleotide sequence analysis of genes essential for capsular **polysaccharide** biosynthesis in *Streptococcus pneumoniae* type 19F.

AUTHOR: Guidolin A; Morona J K; Morona R; Hansman D; Paton J C

CORPORATE SOURCE: Department of Microbiology, Women's and Children's Hospital, North Adelaide, Australia.

SOURCE: INFECTION AND IMMUNITY, (1994 Dec) 62 (12) 5384-96. Journal code: GO7. ISSN: 0019-9567.

PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals; Cancer Journals

OTHER SOURCE: GENBANK-U09239; PIR-S18080; PIR-A32812; PIR-S18148; PIR-B42465; SWISSPROT-P05682; SWISSPROT-P31856; SWISSPROT-P18197; SWISSPROT-P21590

ENTRY MONTH: 199502

AB Previous studies have shown that the capsular **polysaccharide** synthesis (cps) locus of the type 19F *Streptococcus pneumoniae* strain SSZ was closely linked to a copy of the insertion sequence IS1202 (J.K. Morona, A. Guidolin, R. Morona, D. Hansman, and J.C. Paton, J. Bacteriol. 176:4437-4443, 1994). In the present study, we used plasmid insertion and rescue and inverse PCR to clone 6,322 bp of flanking DNA upstream of IS1202. Sequence analysis indicated that this region contains six complete open reading frames (ORFs) and one partial ORF that are arranged as a single transcriptional unit. Chromosomal disruption of any of these ORFs in a smooth-type 19F strain leads to a rough (unencapsulated) phenotype, indicating that this operon is essential for capsule production. The ORFs have therefore been designated cps19fA to cps19fG, where cps19fA is the first gene of the type 19F cps locus. Furthermore, many of the gene products from

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this incomplete operon exhibit strong similarities to **proteins** known to be involved in the production of capsular **polysaccharide**, exopolysaccharide, teichoic acid, enterobacterial common antigen, and lipopolysaccharide from numerous other bacterial species. This has allowed us to propose functions for many of the type 19F cps gene products. Southern hybridization studies reveal that cps19fA and cps19fB are conserved among all 12 pneumococcal serotypes tested, whereas genes downstream of cps19fB are conserved among some, but not all, of the serotypes tested.

L16 ANSWER 11 OF 39 MEDLINE

DUPLICATE 8

ACCESSION NUMBER: 94314440 MEDLINE

DOCUMENT NUMBER: 94314440

TITLE: Neonatal mouse protection against infection with multiple group B streptococcal (GBS) serotypes by maternal immunization with a tetravalent GBS

**polysaccharide-tetanus toxoid**  
conjugate vaccine.

AUTHOR: Paoletti L C; Wessels M R; Rodewald A K; Shroff A A; Jennings H J; Kasper D L

CORPORATE SOURCE: Channing Laboratory, Brigham and Women's Hospital, Boston, Massachusetts.

CONTRACT NUMBER: AI-23339 (NIAID)

AI-30628 (NIAID)

AI-25152 (NIAID)

SOURCE: INFECTION AND IMMUNITY, (1994 Aug) 62 (8) 3236-43.

Journal code: GO7. ISSN: 0019-9567.

PUB. COUNTRY: United States

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals; Cancer Journals

ENTRY MONTH: 199410

AB Most cases of neonatal sepsis and meningitis caused by group B **streptococci** (GBS) are attributable to one of four major capsular serotypes: Ia, Ib, II, or III. Because resistance to infection with GBS has been correlated with the presence of serum antibodies to the type-specific capsular **polysaccharides** in both experimental animals and human neonates, efforts have been made to elicit protective immunity with GBS capsular **polysaccharide** vaccines. However, the GBS capsular **polysaccharides** alone are not highly immunogenic in either animals or human volunteers. Therefore, we and other investigators have attempted to enhance immunogenicity by coupling individual capsular **polysaccharides** to a carrier **protein**. Here we report the synthesis and immunogenicity in rabbits of a GBS type Ib **polysaccharide-tetanus toxoid** vaccine prepared by the direct, **covalent** attachment of tetanus **toxoid** to a selected number of sialic acid residues on the type-specific **polysaccharide**.

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In addition, the Ib **polysaccharide-tetanus toxoid** conjugate vaccine was combined with similar tetanus **toxoid** conjugates of GBS type Ia, II, and III **polysaccharides** to form a tetravalent GBS conjugate vaccine. Protective efficacy of the GBS tetravalent conjugate vaccine was demonstrated in a mouse maternal immunization-neonatal challenge model of GBS infection. The results support testing in human subjects of a multivalent GBS conjugate vaccine of this design, with the eventual goal of protecting newborns against GBS infection.

L16 ANSWER 12 OF 39 BIOSIS COPYRIGHT 2000 BIOSIS

ACCESSION NUMBER: 1994:272701 BIOSIS

DOCUMENT NUMBER: PREV199497285701

TITLE: Effect of genetic switching of capsular type on virulence of *Streptococcus pneumoniae*.

AUTHOR(S): Kelly, Tanya; Dillard, Joseph P.; Yother, Janet (1)

CORPORATE SOURCE: (1) Dep. Microbiol.-661 BBRB Box 12, Univ. Alabama Birmingham, Birmingham, AL 35294-2170 USA

SOURCE: Infection and Immunity, (1994) Vol. 62, No. 5, pp. 1813-1819.

ISSN: 0019-9567.

DOCUMENT TYPE: Article

LANGUAGE: English

AB To assess the role of capsular serotypes in the virulence of *Streptococcus pneumoniae*, we have constructed isogenic derivatives differing only in the type of capsule expressed. Strains of types 2, 5, and 6B were converted to type 3 by transformation and selection for an erythromycin resistance marker **linked** to the type 3 capsule locus. Characterization studies revealed that these type 3 derivatives were indistinguishable from the type 2, type 5, and type 6B parental strains in terms of restriction enzyme fragment pattern and expression of pneumococcal surface **protein A (PspA)**. Expression of the type 3 capsule did not alter the mouse virulence of the similarly virulent type 2 strain. However, alteration of capsule **type** had a profound effect on the virulence of the type 5 and type 6B derivatives. The highly virulent type 5 strain was essentially avirulent when expressing the type 3 capsule. Conversely, the 50% lethal dose of the relatively avirulent type 6B strain was reduced **gt 100-fold** when the type 3 capsule was expressed. Thus, the serotype of capsule expressed has a major effect on virulence, and this effect is dependent upon the genetic background of the recipient strain.

L16 ANSWER 13 OF 39 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 94196516 EMBASE

DOCUMENT NUMBER: 1994196516

TITLE: Serogroup and serotype classification of bacterial pathogens.

Searcher : Shears 308-4994

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AUTHOR: Frasch C.E.  
CORPORATE SOURCE: Division of Bacterial Products, Biologics  
Evaluation/Research Center, Food and Drug  
Administration, Bethesda, MD 20892, United States  
SOURCE: Methods in Enzymology, (1994) 235/- (159-174).  
ISSN: 0076-6879 CODEN: MENZAU  
COUNTRY: United States  
DOCUMENT TYPE: Journal; Article  
FILE SEGMENT: 004 Microbiology  
026 Immunology, Serology and Transplantation  
037 Drug Literature Index  
LANGUAGE: English

L16 ANSWER 14 OF 39 BIOSIS COPYRIGHT 2000 BIOSIS

ACCESSION NUMBER: 1993:499119 BIOSIS  
DOCUMENT NUMBER: PREV199396123126  
TITLE: Molecular cloning, identification, and sequence of  
the hyaluronan synthase gene from **Group**  
**A Streptococcus pyogenes.**  
AUTHOR(S): Deangelis, Paul L.; Papaconstantinou, John; Weigel,  
Paul H. (1)  
CORPORATE SOURCE: (1) Dep. Human Biol. Chem. Genetics, Univ. Tex. Med.  
Branch, Galveston, TX 77555-0647 USA  
SOURCE: Journal of Biological Chemistry, (1993) Vol. 268, No.  
26, pp. 19181-19184.  
ISSN: 0021-9258.  
DOCUMENT TYPE: Article  
LANGUAGE: English

AB The hyaluronan (HA) synthase of **Group A**  
**Streptococci** has been identified by transposon mutagenesis  
and deletion analysis. The genes for the HA synthase and a recently  
identified UDP-Glc dehydrogenase (Dougherty, B. A., and van de Rijn,  
I. (1993) J. Biol. Chem. 268, 71187124) reside on a contiguous  
stretch of 3.2-kilobase pair DNA that can direct HA biosynthesis in  
Enterococcus faecalis and Escherichia coli as well as mutant  
**Streptococcus** (DeAngelis, P. L., Papaconstantinou, J., and  
Weigel, P. H. (1993) J. Biol. Chem. 268, 14568-14571). The synthase  
contains 395 residues (calculated M-r = 45,063) and migrates on  
SDS-PAGE with a molecular mass of 42 kDa. E. coli K5, which  
synthesizes UDP-glucuronic acid for production of its endogenous  
capsular **polysaccharide**, can make HA if it contains a  
plasmid encoding the intact 42-kDa **protein**. E. coli SURE  
or chi-1448 cells containing the same construct, however, cannot  
produce HA since these strains cannot make both required sugar  
nucleotide precursors. The HA synthase is predicted to be an  
integral membrane **protein** with four membrane-associated  
helices, which is consistent with the location of the enzyme  
activity in **Streptococci**. There is significant homology  
between the HA synthase and the Rhizobium nodC gene product, an

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enzyme that synthesizes chitin-like oligomers. This is the first description at the molecular level of an enzyme shown to synthesize a glycosaminoglycan.

L16 ANSWER 15 OF 39 MEDLINE

DUPLICATE 9

ACCESSION NUMBER: 94011388 MEDLINE

DOCUMENT NUMBER: 94011388

TITLE: Stimulation of protective antibodies against type Ia and Ib group B **streptococci** by a **type Ia polysaccharide-tetanus toxoid** conjugate vaccine.

AUTHOR: Wessels M R; Paoletti L C; Rodewald A K; Michon F; DiFabio J; Jennings H J; Kasper D L

CORPORATE SOURCE: Division of Infectious Diseases, Beth Israel Hospital, Boston, Massachusetts..

CONTRACT NUMBER: AI-23339 (NIAID)  
AI-30628 (NIAID)  
AI-28040 (NIAID)

SOURCE: +  
INFECTION AND IMMUNITY, (1993 Nov) 61 (11) 4760-6.  
Journal code: GO7. ISSN: 0019-9567.

PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals; Cancer Journals

ENTRY MONTH: 199401

AB Antisera elicited by type Ia group B **streptococci** (GBS) contain antibodies that react with both type Ia and type Ib strains. Previous studies suggested that antibodies elicited by type Ia organisms recognized a carbohydrate antigen or epitope common to Ia and Ib strains. We now report the synthesis and immunogenicity testing of a **type Ia polysaccharide** -tetanus **toxoid** (Ia-TT) conjugate vaccine. Ia-TT elicited **type Ia polysaccharide**-specific immunoglobulin G antibodies in all three of the rabbits inoculated. In competitive enzyme-linked immunosorbent assay, these antibodies reacted with high affinity to **type Ia polysaccharide** and with lower affinity to the structurally related GBS type Ib **polysaccharide**. Despite the lower binding affinity of the Ia-TT-induced antibodies for the type Ib **polysaccharide**, Ia-TT antiserum opsonized not only type Ia GBS but also type Ib GBS for killing by human blood leukocytes. Ia-TT antiserum was also evaluated in a mouse model designed to test the efficacy of maternal antibodies in protecting neonates against GBS infection. Pups born to dams that had received Ia-TT antiserum were protected against lethal challenge with either type Ia or Ib GBS. These studies using a **polysaccharide-protein** conjugate as an immunogen support the view that the carbohydrate immunodeterminant recognized on Ib strains by Ia antisera is a common epitope

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contained within the structurally related Ia and Ib capsular **polysaccharides**. Although antibodies elicited by Ia-TT had protective activity against both Ia and Ib strains, these antibodies reacted with lower affinity to Ib than to Ia **polysaccharide**

L16 ANSWER 16 OF 39 JICST-EPlus COPYRIGHT 2000 JST

ACCESSION NUMBER: 940024871 JICST-EPlus

TITLE: Studies on Cross Protective Activities of Specific Human Immunoglobulin Against Strain Smith of Staphylococcus aureus Extracted from Pooled Human Sera.

AUTHOR: TOMONO SHUJI

CORPORATE SOURCE: St. Marianna Univ. School of Medicine

SOURCE: Sei Marianna Ika Daigaku Zasshi (St. Marianna Medical Journal), (1993) vol. 21, no. 4, pp. 502-509. Journal Code: Z0605A (Fig. 1, Tbl. 7, Ref. 26)  
ISSN: 0387-2289

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article

LANGUAGE: Japanese

STATUS: New

AB The present experiments were designed to observe whether the specific immunoglobulin preparations were effective against infection with Staphylococcus aureus and group B **streptococci**. A heat-killed vaccine of encapsulated strain Smith of S. aureus was added to pooled human sera. From the antigen-antibody complex, specific human immunoglobulin against strain Smith of S. aureus was obtained by propionic acid (pH 3.0) containing 5% sucrose. The solution that contained the specific **immunoglobulin** was dialyzed against phosphate buffered saline containing 5% sucrose. The specific human immunoglobulin exhibited a 1:256 titer in the bacterial agglutination test, and the total amount of IgG, IgM and IgA in this particular preparation was 91.56% of the **protein**. Intraperitoneal injection of 0.08 mg **protein** of this specific human immunoglobulin protected mice against lethal infection with strain Smith. Also, 0.64mg **protein** of this specific human immunoglobulin protected mice against strain SS-615 of group B **streptococci**. An enzyme-linked immunosorbent inhibition assay showed there was remarkable inhibition with the Smith surface antigen (SSA) and cell surface **polysaccharide** of strain SS-615 (SS-615 SA) but not with a **type** antigen of strain SS-615 (SS-615 TA) . These results suggest possible therapeutic effectiveness of the specific human immunoglobulin on human staphylococcal and group B **streptococcal** infections. (author abst.)

L16 ANSWER 17 OF 39 BIOSIS COPYRIGHT 2000 BIOSIS DUPLICATE 10

ACCESSION NUMBER: 1993:478779 BIOSIS

Searcher : Shears 308-4994

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DOCUMENT NUMBER: PREV199396112379  
TITLE: Serum anti-streptococcal IgA, IgG and IgM antibodies  
in IgA-associated diseases.  
AUTHOR(S): Nakatsuka, Kenji  
CORPORATE SOURCE: Dep. Pediatrics, Natl. Yamaguchi Hospital, Kogushi  
7-3, Toyoura-cho, Yamaguchi 759-63 Japan  
SOURCE: Acta Paediatrica Japonica, (1993) Vol. 35, No. 2, pp.  
118-123.  
ISSN: 0374-5600.

DOCUMENT TYPE: Article

LANGUAGE: English

AB Serum anti-streptolysin-0 antibody (ASO) and anti-  
**streptococcal polysaccharide** antibody (ASP) of  
IgA, IgG and IgM classes were measured using an enzyme-  
**linked** immunosorbent assay in 41 children with IgA  
nephropathy (**Group A**), 15 children with  
uncomplicated anaphylactoid purpura (**Group B**) and 13 children with  
purpura nephritis (**Group C**). The serum concentrations of the IgA,  
IgG and IgM classes were measured by single radial immunodiffusion.  
When compared with sex- and age-matched controls, studied. The  
titers of ASO of the IgA and IgM classes, and those of ASP of the  
IgA and IgG classes, were increased. No significant difference was  
noted in the titers of either ASO or ASP of any class in **Group C**.  
Thus, increased antibody response in IgA nephropathy is not  
restricted to IgA. Anaphylactoid purpura with or without renal  
disease appears to be different in its humoral anti-  
**streptococcal** response from IgA nephropathy.

L16 ANSWER 18 OF 39 MEDLINE

ACCESSION NUMBER: 93041772 MEDLINE

DOCUMENT NUMBER: 93041772

TITLE: Complete structure of the adhesin receptor  
**polysaccharide** of *Streptococcus oralis* ATCC  
55229 (*Streptococcus sanguis* H1).

AUTHOR: Glushka J; Cassels F J; Carlson R W; van Halbeek H  
CORPORATE SOURCE: Complex Carbohydrate Research Center, University of  
Georgia, Athens 30602.

CONTRACT NUMBER: P41-RR-05351 (NCRR)

SOURCE: BIOCHEMISTRY, (1992 Nov 10) 31 (44) 10741-6.  
Journal code: A0G. ISSN: 0006-2960.

PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199302

AB This report describes the determination of the complete primary  
structure of the adhesin receptor **polysaccharide** of  
**Streptococcus oralis** ATCC 55229 (previously characterized as  
**Streptococcus sanguis** H1), a Gram-positive bacteria

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implicated in dental plaque formation. The **polysaccharide** was isolated from *S. oralis* ATCC 55229 cells after deproteination, enzymatic hydrolysis, and ion exchange chromatography. It was shown to consist of rhamnose, galactose, glucose, glycerol, and phosphate, in molar ratios of 2:3:1:1:1. Sequence and **linkage** assignments of the glycosyl residues were obtained by methylation analysis followed by gas-liquid chromatography and electron-impact mass spectrometry. <sup>31</sup>P NMR spectroscopy revealed that phosphate was present in a diester, connecting glycerol to one of the galactosyl residues. High-performance liquid chromatography of a partial acid hydrolysate of the **polysaccharide** confirmed this finding by showing galactose 6-phosphate and glycerol 1-phosphate. The structural determination was completed by the combination of two-dimensional homonuclear Hartmann-Hahn and NOE experiments and heteronuclear [<sup>1</sup>H,<sup>13</sup>C] and [<sup>1</sup>H,<sup>31</sup>P] multiple-quantum coherence experiments. Thus, the adhesin receptor **polysaccharide** of *S. oralis* ATCC 55229 was found to be a polymer composed of hexasaccharide repeating units that contain glycerol **linked** through a phosphodiester to C6 of the alpha-galactopyranosyl residue and are joined end-to-end through galactofuranosyl-beta(1-->3)-rhamnopyranosyl **linkages**: [formula: see text] This structure is novel among bacterial cell surface **polysaccharides** in general and specifically among those implicated in dental plaque formation.

L16 ANSWER 19 OF 39 MEDLINE

DUPLICATE 11

ACCESSION NUMBER: 91100027 MEDLINE

DOCUMENT NUMBER: 91100027

TITLE: Evidence for peptidoglycan absorption in rats with experimental small bowel bacterial overgrowth.

AUTHOR: Lichtman S N; Keku J; Schwab J H; Sartor R B

CORPORATE SOURCE: Department of Pediatrics, University of North Carolina, Chapel Hill 27599-7220..

CONTRACT NUMBER: DK 40249 (NIDDK)  
DK 34987 (NIDDK)SOURCE: INFECTION AND IMMUNITY, (1991 Feb) 59 (2) 555-62.  
Journal code: GO7. ISSN: 0019-9567.PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals; Cancer Journals

ENTRY MONTH: 199104

AB Surgical creation of jejunal self-filling blind loops (SFBL) causes small bowel bacterial overgrowth which is associated with hepatobiliary inflammation in the susceptible Lewis and Wistar rat strains. Since hepatic injury occurs when small bowel anaerobic bacterial concentrations are increased 4 to 6 log<sub>10</sub> units per ml and hepatic bacterial cultures are negative, we postulate that the inflammation is caused by absorption of phlogistic cell wall

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polymers originating from bacteria within the loop. To demonstrate absorption of bacterial cell wall polymers, we measured plasma and hepatic levels of immunoreactive peptidoglycan-polysaccharide (PG-PS) following intraluminal injection as well as anti-PG antibodies as an indirect measure of absorption and/or accumulation of endogenous PG. PG-PS purified from **group A streptococci** was detected in plasma by enzyme-linked immunosorbent assay after intraluminal injection; rats with SFBL showed significantly more uptake into plasma and the liver than sham-operated rats or SFBL rats which were treated with metronidazole (P less than 0.025). Total plasma immunoglobulin A (IgA), IgG, and IgM levels did not differ among sham-operated rats and those with self-emptying blind loops or SFBL, but plasma anti-PG IgA (P less than 0.05), IgG, and IgM (P less than 0.01) levels were increased in rats with SFBL. Metronidazole and tetracycline prevented the elevation of anti-PG antibody, but gentamicin and polymyxin B did not. Anti-lipid A, anti-soy **protein**, and anti-chow antibodies in plasma were not consistently increased in rats with SFBL indicating the lack of a generalized antibody response to luminal antigens. These data suggest that PG from normal flora bacteria is absorbed from the intestinal lumen and that mucosal injury and/or increased luminal concentrations of PG, such as those induced by small bowel bacterial overgrowth, lead to enhanced absorption of potentially inflammatory bacterial polymers.

L16 ANSWER 20 OF 39 MEDLINE

DUPLICATE 12

ACCESSION NUMBER: 91327880 MEDLINE

DOCUMENT NUMBER: 91327880

TITLE: [The modification of the cell wall **proteins**  
in **group A streptococci**

**type M 29** under the influence of spermidine  
contained in the culture medium].

Modifikatsiia belkov kletochnykh stenok streptokokkov  
gruppy A tipa M 29 pod deistviem spermidina,  
soderzhashchegosia v srede kul'tivirovaniia.

AUTHOR: Bitko S A; Shikhman A R; Dynga L O

SOURCE: ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I  
IMMUNOBIOLOGII, (1991 Feb) (2) 4-7.  
Journal code: Y90. ISSN: 0372-9311.

PUB. COUNTRY: USSR

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: Russian

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199111

AB The addition of spermidine into growth medium used for the  
cultivation of **group A streptococci**,  
**type M 29**, leads to changes in the amino acid composition of  
cell walls and surface **proteins** isolated by the method of

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E. H. Beachey et al. The separation of surface **proteins** into fibrinogen-binding **proteins** and fibrinogen receptors by affinity chromatography techniques on cellulose with **covalently** bound fibrinogen indicates that the proportion of these **proteins** in pepsin extracts obtained from different strains varies. Both spermidine and avirulent strains have similar content of fibrinogen-binding **proteins**, although these **proteins** are absent in virulent strains. Different amounts of fibrinogen receptors are extracted from all strains. As shown in the enzyme immunoassay, fibrinogen receptors contain no group-specific **polysaccharide** A, Fc-receptors and interact with total antiserum to **group A streptococci, type M 29** [correction of 28]. Fibrinogen receptors isolated from the strains under study have been found to have similar amino acid composition. On the basis of these results we believe that neither receptor capacity to fibrinogen nor amino acid composition is indicative of the protective properties of **protein M**.

L16 ANSWER 21 OF 39 MEDLINE

DUPLICATE 13

ACCESSION NUMBER: 90354390 MEDLINE

DOCUMENT NUMBER: 90354390

TITLE: Structure of a streptococcal adhesin carbohydrate receptor.

AUTHOR: Cassels F J; Fales H M; London J; Carlson R W; van Halbeek H

CORPORATE SOURCE: National Institute of Dental Research, National Institutes of Health, Bethesda, Maryland 20892.

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1990 Aug 25) 265 (24) 14127-35.

Journal code: HIV. ISSN: 0021-9258.

PUB. COUNTRY: United States

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals; Cancer Journals

ENTRY MONTH: 199011

AB Interactions between complementary **protein** and carbohydrate structures on different genera of human oral bacteria have been implicated in the formation of dental plaque. The carbohydrate receptor on **Streptococcus sanguis** H1 (one of the primary colonizing species) that is specific for the adhesin on **Capnocytophaga ochracea** ATCC 33596 (a secondary colonizer) has been isolated from the **streptococcal** cell wall, purified, and structurally characterized. The hexasaccharide repeating unit of the **polysaccharide** was purified by reverse-phase, amino-bonded silica, and gel permeation high performance liquid chromatography. Earlier studies established that the repeating unit was a hexasaccharide composed of rhamnose, galactose, and glucose in the ration of 2:3:1, respectively. In the present study, determination

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of absolute configuration by gas chromatography of the trimethylsilyl (+)-2-butyl glycosides revealed that the rhamnose residues were of the L configuration while the hexoses were all D. 252Californium plasma desorption mass spectrometry of the native, the acetylated and the reduced and acetylated hexasaccharide determined that the molecular mass of the native hexasaccharide was 959, and that the 2 rhamnose residues were **linked** to each other at the nonreducing terminus of the linear molecule. Methylation analysis revealed the positions of the glycosidic **linkages** in the hexasaccharide and showed that a galactose residue was present at the reducing end. The structural characterization of the hexasaccharide was completed by one and two dimensional <sup>1</sup>H and <sup>13</sup>C NMR spectroscopy. Complete <sup>1</sup>H and <sup>13</sup>C assignments for each glycosyl residue were established by two-dimensional (<sup>1</sup>H,<sup>1</sup>H) correlation spectroscopy, homonuclear Hartmann-Hahn, and (<sup>13</sup>C,<sup>1</sup>H) correlation experiments. The configurations of the glycosidic **linkages** were inferred from the chemical shifts and coupling constants of the anomeric <sup>1</sup>H and <sup>13</sup>C resonances. The sequence of the glycosyl residues was determined by a heteronuclear multiple bond correlation experiment. These data show that the structure of the hexasaccharide repeating unit derived from the cell wall **polysaccharide** of *S. sanguis* H1 is: alpha-L-Rhap-(1----2)-alpha-L-Rhap-(1----3)-alpha-D-Galp- (1----3)-beta-D-Galp-(1----4)-beta-D-Glcp-(1----3)-alpha/beta-D-Gal.

L16 ANSWER 22 OF 39 MEDLINE

DUPLICATE 14

ACCESSION NUMBER: 91012399 MEDLINE

DOCUMENT NUMBER: 91012399

TITLE: The clinical significance of immune reactions with some streptococcal antigens in rheumatoid arthritis.

AUTHOR: Zborovsky A; Lempert B; Baranovskaya N; Babayeva A

CORPORATE SOURCE: Institute of Rheumatology Affiliate, USSR AMS, volgograd..

SOURCE: JOURNAL OF RHEUMATOLOGY, (1990 Jul) 17 (7) 874-9.  
Journal code: JWX. ISSN: 0315-162X.

PUB. COUNTRY: Canada  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199101

AB The level of antibodies and delayed-type hypersensitivity to the group specific **polysaccharides** and cell wall **proteins of groups A, B, C and G streptococci** was determined in 247 patients with rheumatoid arthritis (RA) as well as in healthy persons and in patients with other articular disorders by means of an enzyme **linked** immunosorbent assay, passive hemagglutination and leukocyte migration inhibition tests. An increase of the immune response to antigens of

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group B **streptococcus** was found in patients with RA. The greatest sensitization against these antigens was typical for high disease activity of short duration, and a rapidly progressive course of RA. High titers of antibodies to **polysaccharide** of group B **streptococcus** appeared in the synovial fluid in the early stages of the clinical development of RA. Values of immune response to **streptococcal** antigens correlated well with the titer of rheumatoid factor and the concentration of immunoglobulins and immune complexes. The presence of group B **streptococcus** in the urogenital tract appeared more often in patients with RA than in healthy persons. The possibility of a triggering role for immune reactions with antigens of group B **streptococcus** in the immunopathological process of RA is discussed, as well as the diagnostic significance of our results.

L16 ANSWER 23 OF 39 MEDLINE

DUPLICATE 15

ACCESSION NUMBER: 90343432 MEDLINE

DOCUMENT NUMBER: 90343432

TITLE: Agalactosyl IgG, antibodies to heat shock proteins, and acute rheumatic fever.

AUTHOR: Bahr G M; Yousof A M; Majeed H A; Behbehani K; Lubani M; Parekh R B; Dwek R A; Rademacher T W; Young D B; Mehlert A; et al

CORPORATE SOURCE: Department of Microbiology, Faculty of Medicine, Kuwait University..

SOURCE: ANNALS OF THE RHEUMATIC DISEASES, (1990 Jun) 49 (6) 383-6.

Journal code: 62W. ISSN: 0003-4967.

PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199011

AB In rheumatoid arthritis an increased proportion of the N-linked oligosaccharides on serum IgG terminate with N-acetylglucosamine (agalactosyl IgG). It has recently been shown that group A **streptococcal** cell wall peptidoglycan/**polysaccharide** complex may be used to raise monoclonal antibodies which bind to this glycoform of IgG. Patients with rheumatoid arthritis also have increased levels of antibody to the 65 kD and 70 kD families of heat shock proteins, particularly to a bacterial (*Mycobacterium bovis*) homologue of heat shock protein hsp65. **Streptococci** must contain similar heat shock proteins. Acute rheumatic fever follows infection with group A **streptococci**, and these organisms might theoretically evoke antibody to heat shock proteins or changes in the levels of agalactosyl IgG, which is antigenically cross reactive with their cell walls. It is shown here that serum samples from patients with acute rheumatic fever do

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not differ from those from normal children by these criteria.

L16 ANSWER 24 OF 39 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.  
 ACCESSION NUMBER: 91069584 EMBASE  
 DOCUMENT NUMBER: 1991069584  
 TITLE: Immunodiagnosis of Gram-positive infections.  
 AUTHOR: Lambert P.A.  
 CORPORATE SOURCE: Pharmaceutical Sciences Institute, Aston University,  
 Aston Triangle, Birmingham B4 7ET, United Kingdom  
 SOURCE: Reviews in Medical Microbiology, (1990) 1/4  
 (236-242).  
 ISSN: 0954-139X CODEN: RMEMER  
 COUNTRY: United Kingdom  
 DOCUMENT TYPE: Journal; General Review  
 FILE SEGMENT: 004 Microbiology  
 LANGUAGE: English  
 SUMMARY LANGUAGE: English

AB Immunological methods are assuming growing importance in the diagnosis of Gram-positive infections. With the introduction of co-agglutination, latex bead and a variety of enzyme-linked and membrane-based technologies, highly sensitive, specific and rapid methods for the detection of antigens from Gram-positive bacteria are being developed. Commercial kits are used widely for the identification of *Staphylococcus aureus*, *Streptococcus pneumoniae*, and *streptococci* of groups A, B, C, D, F and G. The value of antigen detection tests lies, not just in their speed and convenience of identification of cultured organisms, but in their application to specimens from which organisms cannot easily be cultured, either through the presence of commensals (e.g. oral flora in sputa) or in patients where antibiotic therapy has been initiated (e.g. bacterial meningitis). In such cases antigen detection provides vital information for the implementation of appropriate therapy. This review assesses the performance of existing detection kits for Gram-positive bacterial antigens and considers future developments exploiting alternative antigen markers. The application of immunological methods to other Gram-positive organisms and the role of specific antibody detection in diagnosis and monitoring of patient therapy is also discussed.

L16 ANSWER 25 OF 39 MEDLINE DUPLICATE 16  
 ACCESSION NUMBER: 90248540 MEDLINE  
 DOCUMENT NUMBER: 90248540  
 TITLE: [Group A streptococcal  
 polysaccharide--stimulator of nonspecific  
 cytotoxic reaction in autologous system of spleen  
 cells].  
 Polisakharid streptokokka gruppy A--stimuliator  
 nespetsificheskikh tsitotoksicheskikh reaktsii v  
 autologicheskoi sisteme kletok selezenki.  
 Searcher : Shears 308-4994

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AUTHOR: Gnezditskaia E V; Bazanova E A; Liampert I M;  
Beletskaia L V  
SOURCE: BIULLETEN EKSPERIMENTALNOI BIOLOGII I MEDITSINY,  
(1990 Feb) 109 (2) 167-9.  
Journal code: A74. ISSN: 0365-9615.  
PUB. COUNTRY: USSR  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: Russian  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199008

AB p4 was shown the ability of **group A streptococcal polysaccharide** (A-PS) to stimulate nonspecific cytotoxic effect of spleen cells on autologous adherent cells (macrophages). The stimulating effect can be observed in vivo under the treatment of spleen cells with A-PS and any antigen (BSA, PPD, M-protein of **group A streptococci**). In the presence of antigen A-PS can induce nonspecific cytotoxic effect of normal spleen cells (mice CBA, BalB/c) and of the mice with DHT and therefore these two immunologic phenomena do not depend on each other. Because A-PS has cross-reactive (CR) determinant with thymus epithelial antigen (factor), it can be assumed that via the CR determinant A-PS **links** with T-cells receptor for this thymus factor and thus realized the stimulating effect as it's functional analogue.

L16 ANSWER 26 OF 39 MEDLINE

DUPLICATE 17

ACCESSION NUMBER: 90225839 MEDLINE

DOCUMENT NUMBER: 90225839

TITLE: [Study of the composition of cell wall of  
**group A Streptococcus**  
after hydrolysis using muramidase from Streptomyces  
levoris].  
Izuchenie sostava kletочноi stenki streptokokka  
gruppy A pri posledovatel'nom gidrolize muramidazoi  
Streptomyces levoris.

AUTHOR: Shmakova Z F; Save'lev E P; Kuznetsov V D; Dynga L O  
SOURCE: ANTIBIOTIKI I KHIMIOTERAPIIA, (1989 Nov) 34 (11)  
827-30.  
Journal code: 69N. ISSN: 0235-2990.

PUB. COUNTRY: USSR  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: Russian  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199007

AB The aim of the experiment was to study the lysis products of cell walls of **group A streptococci** resulting from exposure to N-acetylmuramidase. It was shown that for isolating surface **proteins** free of **polysaccharide** and peptidoglycan fragments it was necessary to treat the

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**streptococcal** cell walls with endo-beta-N-acetylmuramidase for no more than 30 minutes. Prolonged hydrolysis with muramidase led to the presence of **polysaccharide** and the peptidoglycan fragments in the **protein** fractions, intracellular wall **proteins** covalently bound to the peptidoglycan fragments and **polysaccharide** being also released.

L16 ANSWER 27 OF 39 JICST-EPlus COPYRIGHT 2000 JST

ACCESSION NUMBER: 900012869 JICST-EPlus

TITLE: Formation of 1,3,6 glucoside linkage by 1,3-.ALPHA.-D-glucan synthase from *Streptococcus sobrinus*.

AUTHOR: NISHIHARA MASA HARU

CORPORATE SOURCE: Kyushu Dental College

SOURCE: Kyushu Shika Gakkai Zasshi (Journal of the Kyushu Dental Society), (1989) vol. 43, no. 5, pp. 746-755.  
Journal Code: F0834A (Fig. 6, Tbl. 2, Ref. 44)  
CODEN: KSGZA3; ISSN: 0368-6833

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article

LANGUAGE: Japanese

STATUS: New

AB 1,3-.ALPHA.-D-Glucan synthase from *Streptococcus sobrinus* synthesizes water-insoluble glucan in the presence of a sucrose as a substrate and 1,6-.ALPHA.-D-glucan as an acceptor. On the other hand, in the presence of an acceptor, the enzyme shows only sucrose hydrolysis activity and fails to synthesize any glucan. In this study, relationship between the enzyme and an acceptor during insolubilization of an acceptor was examined. Preincubation of the enzyme with dextran T10 in the absence of a sucrose showed delayed migration in polyacrylamide gel electrophoresis and produced a white band of water-insoluble glucan which corresponded with a **protein** band with incubation in the reaction buffer, even in the absence of an acceptor. These results indicate that the **covalent** binding between the enzyme and an acceptor occurs irreversibly at first step of the insolubilization of the acceptor. Total glucans in the reaction mixture of the enzyme were harvested by ethanol precipitation at 15, 30, 60, 120 and 240min after initiation of reaction. These obtained glucans were methylated, degraded, and then evaluated by **gas** chromatography (GC) and **gas** chromatography/mass spectrometry (GC/MS). On the basis of the GC and GC/MS analysis described above, while ratio of 2,4,6-tri-O-methyl-D-glucose to 2,4-di-O-methyl-D-glucose increased in accord with increment of the reaction time, ratio of 2,3,4-tri-O-methyl-D-glucose, which means branch residue, did not increase. That is, with increment of the reaction time, number of 1,3-.ALPHA.-D-glucoside linkage increase and number of 1,3,6-.ALPHA.-D-glucoside linkage did not change.

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(abridged author abst.)

L16 ANSWER 28 OF 39 JICST-EPlus COPYRIGHT 2000 JST

ACCESSION NUMBER: 870283319 JICST-EPlus

TITLE: Studies on the measurement of antibody against C-  
**polysaccharide** antigen of **group**  
**A streptococcus** by the enzyme-  
linked immunosorbent assay.

AUTHOR: TODOME YUKO; OHKUNI HISASHI; YOKOMURO KOZO  
HAMADA SHIGEYUKI

CORPORATE SOURCE: Nippon Medical School  
Osakadai Shi

SOURCE: Nippon Saikingaku Zasshi (Japanese Journal of  
Bacteriology), (1987) vol. 42, no. 2, pp. 513-516.  
Journal Code: F0920A (Fig. 1, Tbl. 1, Ref. 6)  
CODEN: NSKZAM; ISSN: 0021-4930

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Short Communication

LANGUAGE: Japanese

STATUS: New

AB The present paper describes the measurement by ELISA of antibody  
against **group A streptococcal** specific  
C-**polysaccharide** in the immunized rabbit and human sera  
with trypsin-pronase treated whole cells as antigen. The optimal  
concentration of the enzyme-treated whole cells for coating to wells  
was  $2 \times 10^7$  cells/well. Absorption tests with whole cells of  
**group A streptococcus**, purified C-  
**polysaccharide** and N-acetylglucosamine indicated that the  
antibody specific to C-**polysaccharide** was detected by  
ELISA. There was a highly significant correlation between the  
anti-C-**polysaccharide** antibody titrated with  
enzyme-treated whole cells and that with purified C-  
**polysaccharide** as antigen. When the antibody titers (IgG  
class) against the enzyme-treated whole cells of the sera of  
patients with acute post-**streptococcal** glomerulonephritis  
and rheumatic fever were compared with those of the sera of healthy  
individuals by ELISA, the former was significantly higher than the  
latter. The results suggest that anti-C-**polysaccharide**  
antibody can be measured by ELISA with enzyme-treated whole cells as  
antigen. (author abst.)

L16 ANSWER 29 OF 39 BIOSIS COPYRIGHT 2000 BIOSIS DUPLICATE 18

ACCESSION NUMBER: 1987:421928 BIOSIS

DOCUMENT NUMBER: BA84:88590

TITLE: PURIFICATION AND IMMUNOCHEMICAL CHARACTERIZATION OF A  
STREPTOCOCCUS-INTERMEDIUS ATCC 27335  
**POLYSACCHARIDE** ANTIGEN.

AUTHOR(S): TANAKA T

CORPORATE SOURCE: DEP. MICROBIOL., SCH. DENTISTRY, AICHI-GAKUIN UNIV.,  
Searcher : Shears 308-4994

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NAGOYA, JAPAN.  
SOURCE: AICHI-GAKUIN J DENT SCI, (1987) 25 (1), 29-37.  
CODEN: AGDSAB. ISSN: 0044-6912.  
FILE SEGMENT: BA; OLD  
LANGUAGE: Japanese  
AB The rabbit antiserum against the cells of **Streptococcus** intermedius ATCC 27335 was prepared. The antigen extracted by the method of Rantz and Randall was chromatographically purified and analyzed with respect to the constituents. The results obtained were as follows: 1. The antiserum reacted with Rantz and Randall antigens from ATCC 27335, 5 human and 4 rat oral isolates of *S. intermedius*. This antiserum did not react with the antigens from *S. mutans*, *S. sanguis*, *S. salivarius*, *S. bovis*, *S. mitis*, *S. milleri*, *S. constellatus*, *S. morbillorum* and *S. equi*. 2. The Rantz and Randall antigen extracted from the cells grown in 15 liters of BHI broth was chromatographically purified using DEAE-Sephacel and Cellex-CM, followed by Cellulofine GCL-2000. 3. The acid hydrolysate of the purified antigen was analyzed with respect to sugars by **gas** chromatography. Glucose, galactose, mannose, glucosamine, galactosamine and non-identified sugar were analyzed. Glucose and galactose constituted about 93 percent of the total sugar content. The ratio of glucose to galactose was approximately 2 : 1. **Protein** and phosphorus were not detected. 4. The results of quantitative precipitin inhibition tests with various haptenic sugars suggested that a glucose dimer of **.beta.-glucosidic linkage** was the immunodeterminant of the antigen.

L16 ANSWER 30 OF 39 COPYRIGHT 2000 PJB

ACCESSION NUMBER: 86:1857 PHIN  
DOCUMENT NUMBER: P00008577  
DATA ENTRY DATE: 5 Sep 1986  
TITLE: Praxis Biologics to sell shares  
SOURCE: Animal-pharm (1986) No. 112 p8  
DOCUMENT TYPE: Newsletter  
FILE SEGMENT: FULL

L16 ANSWER 31 OF 39 MEDLINE

ACCESSION NUMBER: 88253456 MEDLINE  
DOCUMENT NUMBER: 88253456  
TITLE: Characterization of **protein** and mannan **polysaccharide** antigens of yeasts, moulds, and actinomycetes.  
AUTHOR: Reiss E; Huppert M; Cherniak R  
SOURCE: CURRENT TOPICS IN MEDICAL MYCOLOGY, (1985) 1 172-207.  
Ref: 67  
Journal code: CTM. ISSN: 0177-4204.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
Searcher : Shears 308-4994

09/207188

General Review; (REVIEW)  
(REVIEW, ACADEMIC)

LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198810

AB Antigens in coccidioidin were compared with purified subfractions via tandem immunoelectrophoresis (IEP) and by a combination of advancing line and crossed IEP. Rocket IEP was suitable for titrating the reactions and showing the relationship between column fractions. These techniques required multicomponent antisera produced by hyperimmunization over many months and by the use of known standard migration pairs. The IEP variations were used to chart the development of antisera against coccidioidin factors, to monitor antigen purifications, and to test the immunochemical homogeneity of an isolated antigen. Mannose-based heteroglycans of *Cryptococcus neoformans* were recovered from the culture filtrate. After precipitation of the major viscous glucuronoxylomannan (GXM) with ethanol or cetyltrimethylammonium bromide, the supernate is reserved because it contains a galactoxylomannan (GalXM). After removal of glucuronic acid from the GXM, the resulting xylomannan of serotype A was amenable to <sup>13</sup>C-nuclear magnetic resonance (NMR) spectrometry; it revealed nonreducing xylose, alpha-1,3-mannose, and alpha-1,2/1,3 disubstituted mannose, thus confirming by an independent means what was previously known. The characterization sequence of GalXM included: (1) gas-liquid chromatography (GLC) of neutral sugars as peracetylated aldonitriles; (2) methylation-fragmentation GLC mass spectrometry to determine the glycosidic linkages; and (3) <sup>13</sup>C-NMR showing similarities to mannan of *Saccharomyces cerevisiae*. Affinity chromatography of the GalXM on concanavalin A separated the galactoxylo component from an adsorbed mannoprotein. Selection of monoclonal antibodies (MAbs) relies on presumptive enzyme immunoassays (EIAs) or radioimmunoassays for rapid screening of clones and for determination of isotypes; however, higher resolution confirmatory tests are needed to obtain MAbs of desired specificity. MAbs against *Candida tropicalis* mannan were labeled with horseradish peroxidase to use for detecting mannan in serum. MAbs against the partially purified "m" factor of histoplasmin were characterized by the enzyme-linked immunoelectro-transfer blot technique (EITB), revealing unsuspected complexity in the antigen. Secreted proteins of *Nocardia asteroides* were isoelectrically focused; three proteins, identified by EITB as promising to be specific for that actinomycete, were cut out of gels and used to immunize mice for production of MAbs. The fimbriae of *Actinomyces viscosus* and *A. naeslundii* that mediate lactose-reversible coagglutination with *Streptococcus sanguis* have been used to evoke MAbs. (ABSTRACT TRUNCATED AT 400 WORDS)

L16 ANSWER 32 OF 39 MEDLINE

Searcher : Shears 308-4994

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ACCESSION NUMBER: 85141929 MEDLINE  
DOCUMENT NUMBER: 85141929  
TITLE: Two human IgM myeloma **proteins** with unusual specificities for streptococcal carbohydrate-associated epitopes.  
AUTHOR: Emmrich F; Bundle D; van der Zee J; Out T; Zenke G; Eichmann K  
SOURCE: SCANDINAVIAN JOURNAL OF IMMUNOLOGY, (1985 Feb) 21 (2) 119-26.  
Journal code: UCW. ISSN: 0300-9675.  
PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals; Cancer Journals  
ENTRY MONTH: 198506

AB Five hundred and fifty human sera from patients with IgM myeloma or Waldenstrom's macroglobulinaemia were screened by a solid-phase enzyme-linked immunoassay for binding to the carbohydrate of **group A streptococci** (A-CHO). Two of them (AC8 and AC179) contained immunoglobulin, which bound specifically to A-CHO even at serum dilutions of 1:10(7). Using synthetic oligosaccharides coupled to **protein** for inhibition studies, the fine specificities of AC8 and AC179 were determined. AC179 is directed to alpha-linked rhamnose oligosaccharides. AC8 appears to be specific for N-acetyl-D-glucosamine (GlcNAc) side chains beta(1----2)-**linked** to rhamnose, whereas GlcNAc side chains in A-CHO are reported to be beta(1---3)-**linked** to the rhamnose backbone. Naturally occurring anti-A-CHO antibodies consist mainly of low-affinity antibodies to such beta(1---3)-**linked** GlcNAc. In contrast, both myeloma antibodies show more than 10 times higher relative affinities to A-CHO than antibodies prepared from normal human serum (anti-GlcNAc and anti-A-CHO, respectively) by selection for high affinity in the elution procedure. AC179 induced complement activation in the presence of A-CHO.

L16 ANSWER 33 OF 39 MEDLINE

DUPLICATE 19

ACCESSION NUMBER: 83256426 MEDLINE  
DOCUMENT NUMBER: 83256426  
TITLE: A new method for the selective isolation of cysteine-containing peptides. Specific labelling of the thiol group with a hydrophobic chromophore.  
AUTHOR: Chang J Y; Knecht R; Braun D G  
SOURCE: BIOCHEMICAL JOURNAL, (1983 Apr 1) 211 (1) 163-71.  
Journal code: 9YO. ISSN: 0264-6021.  
PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals; Cancer Journals  
Searcher : Shears 308-4994

09/207188

ENTRY MONTH: 198310

AB A new method for the selective isolation of cysteine-containing peptides was designed. The method is based on the specific labelling of thiol **groups** with a hydrophobic chromophore followed by enzymic fragmentation of the labelled **protein** and reversed-phase high-pressure liquid-chromatographic separation of the peptide mixture. This new method has several distinct advantages: (1) the hydrophobic-chromophore-labelled cysteine-containing peptides are easily separated from non-cysteine-containing peptides by reversed-phase high-pressure liquid chromatography; (2) only cysteine-containing peptides are detected in the visible region with sensitivity at the low picomole level; this high sensitivity allows isolation of nanogram amounts of pure cysteine-containing peptide; (3) during sequence determination of the chromophore-labelled cysteine-containing peptides, the cysteine residues are released as coloured anilinothiazolinone derivatives and can be detected directly in the picomole range; (4) with **proteins** bearing several disulphide groups, each disulphide group may undergo a different degree of reduction, and therefore the recovery of individual cysteine-containing peptides may be used to deduce the disulphide **linkages** present in the native **protein**. Two thiol-specific reagents, 4-dimethylaminoazobenzene-4'-iodoacetamide and 4-dimethylaminoazobenzene-4'-N-maleimide, were synthesized and characterized. The method was successfully used to isolate five cysteine-containing peptides from a completely reduced monoclonal-antibody kappa-light chain raised against the azobenzenearsonate determinant and six cysteine-containing peptides from a kappa-light chain raised against **streptococcal group A polysaccharide**. The principle of this method is applicable to the isolation of any peptide containing amino acid residues that can be specifically labelled with a hydrophobic chromophore.

L16 ANSWER 34 OF 39 MEDLINE

DUPLICATE 20

ACCESSION NUMBER: 83029742 MEDLINE

DOCUMENT NUMBER: 83029742

TITLE: Type-specific protection of neonatal rats from lethal group B streptococcal infection by immune sera obtained from human volunteers vaccinated with type III-specific **polysaccharide**.

AUTHOR: De Cueninck B J; Eisenstein T K; McIntosh T S; Shockman G D; Swenson R M

CONTRACT NUMBER: 1 (NIAID)  
AI-72539

SOURCE: INFECTION AND IMMUNITY, (1982 Sep) 37 (3) 961-5.  
Journal code: GO7. ISSN: 0019-9567.

PUB. COUNTRY: United States  
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Searcher : Shears 308-4994

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LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198302

AB Sera obtained from human volunteers at 6 weeks after vaccination with highly purified type III **polysaccharide** antigen prepared from a **group B Streptococcus**, strain M732, were found to protect neonatal rats from otherwise lethal infection by the homologous strain. The specific antibody content of the sera, expressed in micrograms of antibody **protein** per milliliter, was determined by an enzyme-linked immunosorbent assay in conjunction with quantitative precipitin analysis. For two sera studied in detail, the protective dose of antibody for 50% of the animals was 0.4 micrograms. Immune serum obtained from a volunteer who received type II **polysaccharide** vaccine was not protective against type III infection. Absorption of anti-type III serum by quantitative precipitation of antibodies with type III **polysaccharide** completely removed the passive protective activity of the serum. The results show that antibodies induced in humans by purified type II **polysaccharide** give serotype-specific protection in an animal model of neonatal infection.

L16 ANSWER 35 OF 39 BIOSIS COPYRIGHT 2000 BIOSIS

ACCESSION NUMBER: 1983:217445 BIOSIS

DOCUMENT NUMBER: BA75:67445

TITLE: GLYCO PROTEIN INHIBITORS AND IODOPHILIC  
POLY SACCHARIDE STORAGE IN  
GROUP A STREPTOCOCCUS

-PYOGENES.

AUTHOR(S): MCFARLAND C R; HOFFMAN J A

CORPORATE SOURCE: DEP. MICROBIOL. IMMUNOL., SCH. MED., WRIGHT STATE  
UNIV., DAYTON, OHIO 45434, USA.

SOURCE: MICROBIOS, (1982) 33 (133-134), 169-180.  
CODEN: MCBIA7. ISSN: 0026-2633.

FILE SEGMENT: BA; OLD

LANGUAGE: English

AB Inhibitors of glycoprotein synthesis in eukaryotic cells also inhibited iodophilic **polysaccharide** (IPS) storage in group A *S. pyogenes*. Addition of bacitracin or amphotycin, known inhibitors of polyisoprenol phosphate metabolism or lipid-linked oligosaccharide synthesis, indicated that a key intermediate must be synthesized before IPS storage could be detected. Based on inhibitor action and energy requirements the intermediate was most likely an undecaprenol pyrophosphoryl maltosaccharide. Biosynthesis of the maltosaccharide had an ATP requirement as shown by arsenate action but IPS synthesis via amylomaltase (EC 2.4.1.25) was energy independent if the lipid-linked saccharides were preformed. Maltosaccharide acceptor site blockade with 2-deoxy-D-glucose immediately inhibited IPS

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storage, which demonstrated the need of acceptor glucose residues for transglucosylation activity of amylomaltase. Tunicamycin failed to inhibit IPS synthesis although it was added in lethal concentrations.

L16 ANSWER 36 OF 39 BIOSIS COPYRIGHT 2000 BIOSIS  
ACCESSION NUMBER: 1979:64544 BIOSIS  
DOCUMENT NUMBER: BR17:4544  
TITLE: IMMUNO GLOBULIN SUBCLASS SPECIFIC IMMUNO DEFICIENCY  
IN MICE WITH AN X LINKED BONE MARROW  
DERIVED LYMPHOCYTE DEFECT.  
AUTHOR(S): NAHM M; PERLMUTTER R; STEIN K; SLACK J; ZITRON I;  
PAUL W; DAVIE J  
SOURCE: Fed. Proc., (1979) 38 (3 PART 1), 1082.  
CODEN: FEPR7. ISSN: 0014-9446.  
DOCUMENT TYPE: Conference  
FILE SEGMENT: BR; OLD  
LANGUAGE: Unavailable

L16 ANSWER 37 OF 39 MEDLINE DUPLICATE 21  
ACCESSION NUMBER: 76236934 MEDLINE  
DOCUMENT NUMBER: 76236934  
TITLE: Purification and immunochemical characterization of  
type e **polysaccharide** antigen of  
Streptococcus mutans.  
AUTHOR: Hamada S; Slade H D  
SOURCE: INFECTION AND IMMUNITY, (1976 Jul) 14 (1) 68-76.  
Journal code: GO7. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 197611

AB The type-specific antigen of **Streptococcus mutans** strain MT703, serotype e, has been chromatographically purified and characterized. Two chromatographic fractions were obtained from saline extracts which reacted with both anti-MT703 whole-cell serum and Lancefield group E serum. The major fraction (eI) was identified as a **polysaccharide** composed of 37% glucose, 56% rhamnose, 5% **protein**, and 0.3% phosphorus, whereas the minor fraction (eII) contained 66% **protein** in addition to 10% glucose and 17% rhamnose. The immunological specificity of these antigens was found to be the same by immunodiffusion in agar gel. Another fraction with a negative charge (eIII) reacted with polyglycerophosphate antisera from **Streptococcus mutans** and **Streptococcus pyogenes**. For comparison, the MT703 antigen in a hot trichloroacetic acid extract (eA) and the group E antigen from a saline extract of cells of strain K129 (EI) were similarly purified by anionic ion-exchange chromatography. Although

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the ratio of glucose and rhamnose in eA was 1:0.9 and in eI and eII approximately 1:1.5, reactions of identity were obtained in gel diffusion against specific anti-e serum. This difference in ratio is probably a result of the extraction procedures. Both the type e and group E antisera were reactive with both eI and EI antigens. The adsorption of group E antiserum with MT703 cells removed all E antibody, whereas type e-specific antibody remained after adsorption with K129 cells. These results suggest that eI antigen possesses both e and E specificities, whereas EI possesses E only. These findings were supported by the quantitative precipitin test and immunodiffusion and/or immunoelectrophoretic patterns in agar gel. Methyl-beta-D-glucopyranoside markedly inhibited the precipitin reaction in both type e and group E sera. However, a significantly stronger inhibition by cellobiose of type e serum than of group E serum indicates that a beta-linked glucose-glucose dimer is the predominant antigenic determinant of the e specificity. The presence of both e and E specificities on a single polysaccharide molecule was demonstrated by the use of purified e antigen released from a specific e-anti-e complex. This antigen reacted with a group E-specific serum as well as a type e-specific serum. An examination of five S. mutans type e strains showed the presence of group E specificity also, whereas the I, II, and IV serotypes of group E streptococci only possessed the group E specificity.

L16 ANSWER 38 OF 39 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 75037968 EMBASE

DOCUMENT NUMBER: 1975037968

TITLE: Genetics of restricted antibodies to  
streptococcal group polysaccharides  
in mice. I. Strain differences of isoelectric  
focusing spectra of group A  
hyperimmune antisera.

AUTHOR: Cramer M.; Braun D.G.

CORPORATE SOURCE: Basel Inst. Immunol., Basel, Switzerland

SOURCE: Journal of Experimental Medicine, (1974) 139/6  
(1513-1528).

CODEN: JEMEAV

DOCUMENT TYPE: Journal

FILE SEGMENT: 026 Immunology, Serology and Transplantation  
022 Human Genetics  
030 Pharmacology

LANGUAGE: English

AB The immune response of 9 inbred and one outbred strain of mice to the streptococcal group A polysaccharide was investigated with respect to magnitude and restriction. Analytical isoelectric focusing served as a tool to estimate the degree of restriction of Group A polysaccharid specific antibodies. It proved feasible to

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distinguish low and intermediate from high responder strains, and to delineate strain specificity of isoelectric focusing spectra of the immune sera. For example, immune sera of BALB/c mice, restricted high responders, and immune sera of C57BL/6 mice, heterogeneous low responders, had distinct focusing properties. Responsiveness was a dominant autosomal genetic trait in C57BL/6 x BALB/c F1 hybrid mice, irrespective of the maternal and the paternal genotype; the immune sera of these mice had their own, rather uniform isoelectric focusing spectra whereby structural genes of the low responder strain were expressed to predominant levels in 81% of the hybrids. Responsiveness in C57BL/6 x BALB/c F2 progeny segregated into 79% high and 21% low responders, and showed no genetic linkage to the following characteristics: hair color, sex, H 2 type, and Ig allotype of the heavy chain. The isoelectric focusing properties of these immune sera indicated segregation into patterns like BALB/c mice (40%), F1 hybrids (48%), and C57BL/6 mice (12%). Since this segregation is independent of any of the above criteria in these F2 mice a regulatory gene(s) is postulated that controls the clonal pattern of the immune response.

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ACCESSION NUMBER: 74072108 EMBASE

DOCUMENT NUMBER: 1974072108

TITLE: Extraction, purification, and chemical and immunological properties of the *Streptococcus mutans* group 'a' polysaccharide cell wall antigen.

AUTHOR: Mukasa H.; Slade H.D.

CORPORATE SOURCE: Dept. Microbiol., Northwest. Univ. Med. Sch., Chicago, Ill. 60611, United States

SOURCE: Infection and Immunity, (1973) 8/2 (190-198).  
CODEN: INFIBR

DOCUMENT TYPE: Journal

FILE SEGMENT: 004 Microbiology

LANGUAGE: English

AB An antigen of *S. mutans* has been extracted from HS6 (group 'a') whole cells and repeatedly fractionated by Sephadex chromatography. The antigen is shown to be a polysaccharide and contains the *S. mutans* group 'a' antigenic site and also a second antigenic site which is common to 'a' strains and 2 of 3 group 'd' strains. Immunological electrophoretic and chromatographic data indicate that the two sites exist in a single molecule. The polysaccharide has a molecular weight of 107,000 and is composed of glucose, galactose, glucosamine, and galactosamine. No significant quantities of lipid, phosphorus, glycerol, or ribitol are present. Immunological specificity of the group 'a' polysaccharide site depends primarily on a D-glucose D-glucose sequence, the 'a-d' site on a terminal D-galactose. Water at 100 C and pepsin (pH 2.5) at room

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temperature are very effective in extracting the **polysaccharide** from lyophilized *S. mutans* cells. Trypsin and lysozyme are less effective. The antigen antibody combining site appears to be located at the cell wall surface. A small quantity of enzyme resistant **protein** (5%) is firmly linked to the antigen and is considered to be a remnant of a **protein** to which the **polysaccharide** is attached in the cell wall. The composition of the **protein** does not identify it as a part of the peptidoglycan. No reaction to the purified **polysaccharide** is obtained with antisera specific for teichoic acid glycerophosphate polymers from **streptococci**, **staphylococci**, or **lactobacilli**.